School of Community and Environmental Health

3118 Health Sciences Building
757-683-4259
http://www.odu.edu/commhealth (http://www.odu.edu/commhealth/)

Dr. Steven M. Becker, Chair

The School of Community and Environmental Health offers graduate and certificate programs which lead to careers in health services research, public health, community health, health care administration, environmental health, and occupational safety. ODU offers a Master of Public Health degree designed to prepare students for entry and/or advancement in public health careers. The Master of Science in Community Health offers practicing health care professionals the opportunity to complete their degrees in a distance format with emphasis areas in environmental health, occupational safety and health, and industrial hygiene.

Master of Public Health (MPH)

Dr. Praveen Durgampudi, Graduate Program Director
Email Address: mph@odu.edu (https://www.odu.edu/academics/programs/masters/public-health)
Website: https://www.odu.edu/academics/programs/masters/public-health

Students can complete this program in a traditional (classroom) format or online.

The Master’s of Public Health (MPH) is designed to prepare students for entry and/or advancement in public health careers. The program provides students with an understanding of the public health sciences and with knowledge and skills that can be utilized in healthcare management, population-based research, and the community practice of public health. The MPH is designed for students with a bachelor’s degree from all academic disciplines within and outside of the health disciplines. The graduates of the program will be ready to serve as invaluable professionals and leaders in the realm of public health care services. The program is available as traditional (class-room), online or hybrid options.

Graduates of the MPH with a concentration in Health Behavior and Health Promotion are successful health behavior and health promotion leaders, directors, managers, health educators, community health planners, program managers, and program evaluators in public and private sectors including health departments, not-for-profit organizations, and foundations. Their work is aimed at preventing disease and injury and promoting healthy behaviors through education, communication, research, and publication.

Graduates of the MPH with a concentration in Global Environmental Health will be prepared to work for local, state, and federal agencies, the uniformed services, not-for-profit organizations, international organizations, and the private sector in such roles as environmental health officer, public health emergency response coordinator, global environmental health analyst, food safety officer, environmentalist/sanitarian, environmental disaster specialist, health inspector, bioterrorism preparedness coordinator, environmental health consultant, and consumer safety officer.

Admission

Students must complete an application for graduate admission to be considered for admission to the MPH program.

The graduate admission application (https://odu.force.com/portal/TX_SiteLogin/?startURL=%2Fportal%2FTargetX_Base__Portal) is available on the Office of Admission’s website.

Applications to the program, including all supporting materials, must be submitted online. Admission to the program is competitive, and is based on academic qualifications and experience. Applications are reviewed on rolling basis and late submitted applications may be considered.

Application Checklist:

1. Completion of Bachelor’s Degree from an accredited US institution or Foreign institution.
2. Two (2) letters of recommendation from academic sources or employment supervisor. Additional letters of recommendation are encouraged, if available.
3. Unofficial transcripts from all degree-granting programs listing the dates of program completion or attendance.
4. A 500-word essay describing the applicant’s interests in public health and reasons for choosing to apply for the MPH program.
5. TOEFL/IELTS is required for International Applicants.
6. Course by Course WES evaluation for international applicants, if available.
7. Complete an evaluation of transfer by the Office of Admissions, if required, for applicants transferring from a CePH accredited MPH program.

Though GPA is not the sole criterion for admission, a minimum grade point average of 3.00 or higher makes the applicant most competitive. Applicants will be formally notified of admission status in two weeks following the application deadline and will be advised by an assigned faculty advisor. Students not admitted will receive a notice informing them of the decision. Applicants need to confirm their spot in the program within 2 weeks of receiving a decision.

Continuance and Readmission Policy

In addition to the Old Dominion University continuance policies in this catalog, the following policies are specific to all concentrations in the MPH Program:

1. An overall grade of B (3.00) or better is required to graduate from the MPH program.
2. A student who leaves the program and is readmitted may be required to take additional coursework prior to or concurrent with readmission.
3. A student may be readmitted to the MPH program only once.

Curriculum (2019, 2020 & 2021 Entry)

The Master of Public Health (MPH) is a 43-credit program. All courses include the standardized, competencies required for accreditation of MPH programs by the Council on Education for Public Health (CEPH). Students can select a concentration during their first two terms of the program.

Core Courses

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MPH 610</td>
<td>Introduction to Public Health</td>
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<tr>
<td>MPH 611</td>
<td>Social and Behavioral Sciences for Public Health</td>
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<td>MPH 612</td>
<td>Statistical Reasoning for Public Health</td>
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<tr>
<td>MPH 746</td>
<td>Epidemiology</td>
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<tr>
<td>MPH 613</td>
<td>Environment, Society, and Health</td>
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<td>MPH 615</td>
<td>Systems Thinking and Health Management</td>
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<td>MPH 616</td>
<td>Research Methods in Public Health</td>
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<td>MPH 630</td>
<td>Health Communication and Social Marketing for Public Health</td>
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<tr>
<td>MPH 640</td>
<td>Health Disparities and Social Justice</td>
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<tr>
<td>MPH 651</td>
<td>Health Promotion Theory and Practice</td>
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<tr>
<td>MPH 661</td>
<td>Program Planning and Evaluation</td>
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Global Environmental Health (GEH)

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MPH 622</td>
<td>Environmental Health Law, Justice and Governance</td>
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<tr>
<td>MPH 632</td>
<td>Environmental and Occupational Health Risk Assessment</td>
</tr>
<tr>
<td>MPH 778</td>
<td>Global Environmental Health</td>
</tr>
<tr>
<td>MPH 784</td>
<td>Creating Sustainable Environmental Futures</td>
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Applied Epidemiology and Public Health Data Analytics (AEPHDA)
can select a concentration during their first two terms of the program.

Students may take MPH-level courses as early as four semesters prior to their graduation and count up to 12* graduate credit hours toward their undergraduate degree program requirements when planning their course of study. If the plan outlined on the website does not meet a student’s professional needs, the student should contact the MPH Program (mph@odu.edu) for an individualized plan.

**Curriculum (2022 Entry- onwards)**

The Master of Public Health (MPH) is a 43-credit program. All courses include the standardized, competencies required for accreditation of MPH programs by the Council on Education for Public Health (CePH). Students can select a concentration during their first two terms of the program.

**Core Courses**

- MPH 600 Introduction to Public Health Practice
- MPH 605 Introduction to Biostatistics for Public Health
- MPH 608 Environment and Public Health
- MPH 611 Social and Behavioral Sciences for Public Health
- MPH 614 Principles of Epidemiology
- MPH 616 Research Methods in Public Health
- MPH 620 Health Management and Systems Thinking

**Health Behavior and Health Promotion (HBP)**

- MPH 630 Health Communication and Social Marketing for Public Health
- MPH 640 Health Disparities and Social Justice
- MPH 651 Health Promotion Theory and Practice
- MPH 661 Program Planning and Evaluation

**Global Environmental Health (GEH)**

- MPH 622 Environmental Health Law, Justice and Governance
- MPH 632 Environmental and Occupational Health Risk Assessment
- MPH 778 Global Environmental Health
- MPH 784 Creating Sustainable Environmental Futures

**Applied Epidemiology and Public Health Data Analytics (AEPHDA)** 12

- MPH 712 Applied Biostatistics
- MPH 713 Applied Statistical Programming
- MPH 716 Application of Epidemiological Methods
- MPH 717 Epidemiology of Infectious Diseases

**Electives (Select Two) * 6**

- MPH 670 Cultural Issues in Health Promotion and Education
- MPH 688 Grant Writing for Public Health Practice
- MPH 643 Principles of Toxicology
- MPH 776 Global Health

**Practicum**

- MPH 669 Applied Practice Experience

**Capstone**

- MPH 689 Integrative Learning Experience

* Additional electives with approval of Program Director

**Sequence of Course Offerings**

A full-time student should be able to finish the program in five (5) academic terms. The study plan is designed to both accommodate typical student program time-to-completion needs and ensure a successful path through the coursework to program completion. Each core course is offered once per academic year in a specific semester, both online and on-campus to maximize opportunity for degree completion. If the plan outlined on the website does not meet a student’s professional needs, the student should contact the MPH Program (mph@odu.edu) for an individualized plan.

**Graduation Requirements**

Requirements for graduation include a minimum 43 graduate credit hours, minimum cumulative grade point average of 3.00 overall and in the concentration.

**Financial Assistance**

Financial aid is available to graduate students at Old Dominion University. The MPH program offers graduate assistantships each semester. In addition to the financial aid offered by the University, graduate students may be eligible for aid and student loans administered by other agencies. For information please contact the Office of Student Financial Aid.

For additional information on the MPH curriculum or admission requirements or if you’re interested in taking courses as a non-degree seeking student, please contact the Graduate Program Director (mph@odu.edu).

**MPH/MPA Dual Degree**

Students can pursue a Dual Master’s degree program in MPH and MPA. For additional information please contact one of the Graduate Program Directors at mph@odu.edu or mpa@odu.edu.

**Linked MPH Program - Bachelor of Science in Public Health (B.S.P.H.) to Master of Public Health (M.P.H.)**

The linked MPH - Bachelor's (BSPH) to Master's Program (MPH) provides qualified ODU undergraduate students with the opportunity to earn a Master's degree in Public Health while taking up to 12 credits of the MPH program as an undergraduate student. The program is designed for highly motivated students with the desire to immediately continue their education after the Baccalaureate (BSPH) degree. It is especially relevant to individuals seeking to work (or currently working) in the public health or non-profit sectors but is suitable for students from any undergraduate discipline. Successful applicants must have demonstrated both a mature attitude and superior academic achievement. They must be recommended to the program by their major advisor or program director.

Students in the BSPH to MPH program should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the linked BSPH to MPH program work in close consultation with the BSPH director and the MPH Program Office to develop an individualized plan of study based on the required coursework outlined below.

Well-qualified (Overall program GPA 3.5 and above) undergraduate students may take MPH-level courses as early as four semesters prior to their graduation and count up to 12* graduate credit hours toward their

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undergraduate degree. After receiving his/her undergraduate degree, a student will continue with the MPH program, taking MPH courses until completing the required 43 credit hours.

* For additional information, please contact the Program Directors at bsph@odu.edu or mph@odu.edu.

Graduate Certificate in Occupational Safety

The certificate program in occupational safety is designed to prepare students to meet safety standards and guidelines in such areas as business, education and industry with the goal of managing operations to minimize financial losses resulting from accidents, health claims, legal actions, and property damage. It is especially attractive to students in majors such as engineering, occupational and technical studies, and business who may reasonably anticipate assignment of safety as an additional duty, or to individuals already employed in the occupational health and safety field.

Course taken for the Certificate may also be used to qualify for safety positions, enhance the qualifications of Certified Safety Professional (CSP) and Certified Industrial Hygienist (CIH) candidates, and provide maintenance points for professionals holding the CSP or CIH certifications. Courses in the certificate program may be taken through degree or nondegree programs, and may be applied to degree requirements at the graduate level in environmental health. For completion of the graduate certificate program students must have a minimum cumulative grade point average of 3.00 in all courses taken toward the certificate. After successful completion of the program, a Certificate in Occupational Safety will be awarded. A total of 15-16 semester hours is required, comprised of three core courses and six to seven hours of electives. All courses, with the exception of the lab course, are provided as distance learning, either as televised or web-based courses. There are no prerequisites.

Core courses include:

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<thead>
<tr>
<th>Core Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EN VH 506  Principles of Occupational Safety and Health</td>
<td>3</td>
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<td>EN VH 525  Occupational Safety and Health Program Management</td>
<td>3</td>
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<tr>
<td>EN VH 507  Occupational Safety Standards, Laws and Regulations</td>
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Select two of the following electives: 6-7

<table>
<thead>
<tr>
<th>Electives</th>
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<tbody>
<tr>
<td>EN VH 501  Occupational Health</td>
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<td>EN VH 526  Physical Hazards and Their Control</td>
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<td>EN VH 540  Principles of Ergonomics</td>
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<td>EN VH 541  Industrial Hygiene</td>
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<tr>
<td>EN VH 542  Industrial Hygiene Sampling Methods</td>
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<td>EN VH 546  Physical Hazards Laboratory</td>
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Total Hours 15-16

COMMUNITY HEALTH PROFESSIONS Courses

CHIP 500. Ethics in Health Administration. 3 Credits.

A survey of philosophical problems common to health sciences, including an analysis of the nature of health in its historical and contemporary contexts. Prerequisite: permission of the instructor.

CHIP 515. Critical Issues in Public/Community Health Administration. 3 Credits.

Identification and analyses of critical issues currently facing public/community health and the American health care system. Prerequisites: Permission of the instructor.

CHIP 520. Foundations of Gerontology. 3 Credits.

Focuses on changes in the characteristics, status, and roles of the elderly; personality development, mental health, and adjustment of individuals with emphasis on biophysical and psychosocial processes as they influence capacity and performance in the elderly. Prerequisite: permission of instructor.

CHIP 525. Health Aspects of Aging. 3 Credits.

Focuses on changes in the characteristics, status, and roles of the elderly; personality development, mental health, and adjustment of individuals with emphasis on biophysical and psychosocial processes as they influence capacity and performance in the elderly. Prerequisite: permission of the instructor.

CHIP 530. Community Health Resources and Health Promotion. 3 Credits.

Designed to provide information about community health resources. Prerequisite: permission of instructor.

CHIP 540. Finance and Budgeting in Healthcare. 3 Credits.

This course covers financial management functions in healthcare organizations including operating and capital budgeting processes along with budgeting and financial controls.

CHIP 545. Health Services Research. 3 Credits.

This course focuses on health services research and its assessment abilities and application in health care. Topics include the use of EXCEL, SAS, and SPSS to analyze data. An exploration of the issues and challenges of health services research for health related organizations and other organizations. Statistical procedures and practices will also be conducted. Prerequisite: STAT 130M.

CHIP 550. Public and Community Health Administration. 3 Credits.

A review of the principles and practice of administering public and community health organizations and programs at federal, state, and local levels. Constitutional, statutory and administrative bases for organizing and conducting public/community health programs will be discussed. Prerequisites: A declared major in the BSHS Health Services Administration program or the BS in Public Health or approval of the program director.

CHIP 556. Substance Use and Abuse. 3 Credits.

Focuses on facts about drugs and drug abuse, on value judgments concerning drugs, and on interaction of facts and value judgments. Emphasis is on drug abuse prevention. Prerequisite: permission of instructor.

CHIP 561. Managerial Epidemiology. 3 Credits.

This course will blend theory and application of epidemiology. This course will also provide a comprehensive introduction to epidemiology and explain how to use epidemiological concepts and tools to improve decisions about the management of health services. Prerequisites: STAT 130M and a declared major in the BSHS Health Services Administration program or the BS in Public Health or approval of the program director.

CHIP 565. Policy and Politics of Health. 3 Credits.

This course will explore both health policy and the politics of health. Students will develop an understanding of the systematic and analytical framework for developing health and health care policy issues.

CHIP 570. Death, Dying and Survivorship. 3 Credits.

Utilizes readings from sociology, psychology, literature, art, law, religion, and the medical and nursing sciences to explore death in its personal, cultural and professional significance. Audiovisual presentations and guest speakers will provoke thought and discussion to allow students to come to terms with their attitudes toward death and assist others in dealing with this important life experience. Prerequisite: permission of instructor.

CHIP 575. Healthcare Marketing. 3 Credits.

This course provides basic understanding of marketing in a health care setting. This course will cover the following: the history of marketing in a health care setting, health care markets, marketing techniques, and leadership skills in managing and supporting the marketing efforts. Prerequisite: a declared major in the University or approval of the program director.

CHIP 580. Health Ethics and the Law. 3 Credits.

This course provides the students with a basic knowledge of health law and examines legal issues confronting health services administrators in various health care environments. Prerequisite: a declared major in the University or approval of the program director.

CHIP 585. Health Informatics. 3 Credits.

This course focuses on healthcare informatics (information systems) and application in health care organizations. It provides an overview of health information system concepts, management, and integration of technology in healthcare organizations.

3 School of Community and Environmental Health
CNP 509. Topics in Public/Community Health Administration. 1-3 Credits.
This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member. Prerequisite: permission of the instructor.

CNP 596. Topics in Public/Community Health Administration. 1-3 Credits.
This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member. Prerequisite: permission of the instructor.

CNP 597. Readings in Public/Community Health Administration. 1-3 Credits.
This course provides the opportunity for advanced investigations of selected issues/concerns in public/community health administration, under the supervision of a faculty member. It must be taken by students who wish to pursue topics not covered by regularly scheduled courses. Prerequisite: permission of the instructor.

CNP 600. Principles of Community Health. 3 Credits.
The course will provide an introduction to the relationship between health status, the current multifaceted delivery system and the social and political aspects of the community. Topics of this course include community health education, sanitation, mental health, maternal and child health, and others.

CNP 601. Research Design and Evaluation in the Health Professions. 3 Credits.
This course is designed for graduate students in the health professions to explore the concepts, problems, needs, and issues in both conducting research and evaluation and in analysis of research related to the health professions. An understanding of statistics is strongly advised.

CNP 602. Principles of Environmental Health Science and Protection. 3 Credits.
An introduction to the chemical, physical and biological factors affecting human health and well being. The emphasis is on the application of controls to prevent disease and maximize environmental quality. (Cross-listed with ENVH 600).

CNP 611. Social and Cultural Aspects of Public Health and Illness. 3 Credits.
Scholars will gain an understanding of social and cultural issues associated with public health and illness through discussion, application of principles and theories and an interactive case study. Scholars will identify personal and social influences on public health and discuss health disparities and community health needs. Special attention will be paid to populations bound by shared risks and behaviors.

CNP 630. Health Care Marketing. 3 Credits.
This course is devoted to exploring the fundamentals of marketing as they relate to the health care environment. Emphasis will be placed on marketing of new programs, including health-promotion programs. It provides a survey of marketing activities as they relate to the health care environment.

CNP 633. Financing Health Care. 3 Credits.
Students will examine financial evaluation of the health care industry, the source of funds, and the effects of changing patient policies. Other topics of interest will be financial strategies, budgets, and capital outlay.

CNP 635. Managed Care. 3 Credits.
This course provides the student all the basic information needed to learn critical concepts of managed care. It explores topics ranging from the roots of managed care to types of managed care organizations, negotiating and contracting for services, controlling utilization and using data reports in the management of managed care organizations. In addition, the course addresses the future of managed care in the turbulent, dynamic health care environment.

CNP 637. Issues In Health Care Administration. 3 Credits.
This course explores current issues/trends faced by health care/institutions in the constantly evolving health care environment. Topics such as the impact of shift in service delivery from inpatient to outpatient care, development of multihospital systems and hospital alliances, prospective payment systems, retrospective payment systems and many other critical issues will be addressed.

CNP 640. Statistical Reasoning for the Health Professions. 3 Credits.
This course introduces the application of quantitative reasoning through the use of fundamental concepts in statistics and quantitative analyses in health care. Main topics include univariate, bivariate and multivariate procedures appropriate with parametric and non-parametric data. Related topics include: sampling distribution, statistical inference, and hypothesis testing.

CNP 646. Epidemiology. 3 Credits.
This course examines epidemiology as a method for viewing inborn community health problems and as a body of knowledge derived from this method. Skills in using epidemiology as a method and as knowledge to solve community health problems will be included.

CNP 651. Public and Community Health Administration. 3 Credits.
A review of the principles and practice of administering public and community health organizations and programs at federal, state and local levels. Constitutional, statutory and administrative bases for organizing and conducting public and community health programs will be discussed.

CNP 669. Practicum. 1-6 Credits.
Field experience. The student is provided an opportunity to apply academic philosophy, theory, and principle during a period of supervised practice.

CNP 690. MSCH Comprehensive Exam. 0 Credits.
The Master of Science in Community Health Comprehensive Examination offers the student an opportunity to synthesize the learning experience of the graduate program and demonstrate mastery of program outcomes. The student must receive a grade of pass on the comprehensive exam to successfully complete the MSCH degree.

CNP 695. Topics in Community Health. 1-3 Credits.
This course provides the opportunity for the study of selected topics in community health, under the supervision of a faculty member. Prerequisites: permission of the instructor.

CNP 697. Readings in Community Health. 1-3 Credits.
This course provides an opportunity for advanced investigations of selected issues/concerns in community health, under the supervision of a faculty member. It may be taken by students who wish to pursue topics not covered by regularly scheduled courses. Prerequisites: permission of the instructor.

CNP 698. Thesis Research. 1-6 Credits.
Devoted to research, writing of the thesis and scheduled conferences with the candidate's advisor and thesis committee. Student must submit an acceptable written thesis demonstrating knowledge of problem selection, data classification, analysis and interpretation and defend it.

CNP 699. Thesis Research. 1-6 Credits.
Devoted to research, writing of the thesis.

CNP 711. Applied Biostatistics for Health Care Research. 3 Credits.
This course is a conceptual approach to selection and application of univariate, bivariate and multivariate statistical techniques in health research data analysis. Emphasis is placed on handling large data sets and the use of a computer for manipulation of quantitative data.

CNP 715. Decision Analysis in Health Care. 3 Credits.
This course is a conceptual approach and teaches students the art and science of decision making. It covers expected utility theory, decision tree analysis, cost benefit analysis, and the psychological aspects of the decision-making process in the context of health policy research. (Cross-listed with HLSC 815).

CNP 720. Health Care Delivery Systems. 3 Credits.
This course provides the student with an opportunity to analyze the American health-care system. Like any other system in our society, the health care system is composed of complex organizational dynamics and structures which predicate the interaction between the major components of the system: personnel who provide service; institutions in which care is provided; financing mechanisms that pay for care; and the government which attempts to regulate it. This course is designed for in-depth analysis and synthesis of all aspects of health care delivery with an emphasis on improving the delivery and access to care.
ENV 500. Occupational Safety Standards, Laws and Regulations. 3 Credits.
A review of the important Occupational Safety and Health Standards and Codes with particular emphasis on application of these codes to typical work situations. Governmental enforcement methodologies are also discussed.

ENVH 520. Communicable Diseases. 3 Credits.
An in-depth study of the communicable disease processes as they pertain to environmental sources. A detailed discussion of specific communicable diseases that are manifested by various environmental etiologic agents. Various environmental control measures to prevent the incidence of communicable diseases are presented.

ENVH 521. Food Safety. 3 Credits.
A comprehensive study of food and milk production, processing and preservation and controls exercised for the prevention of foodborne illnesses and spoilage.

ENVH 522. Water and Wastewater Technology. 3 Credits.
Introduction to water quality management and wastewater treatment technology. Topics include the effect of organic, inorganic and thermal pollutants in water quality streams, waterborne diseases, monitoring concepts, methods of water quality management, regulatory considerations, theory and application of wastewater treatment concepts, wastewater characterization, and treatment methods and disposal methods.

ENVH 523. Vector-Borne Diseases and Their Control. 3 Credits.
Vector-borne diseases affect the health and well-being of humans and other animals in a wide variety of ways. Arthropod vectors (e.g., mosquitoes, filth flies, ticks and related groups) transmit numerous debilitating infectious diseases that oftentimes impose significant burden on healthcare systems. This course provides insight on the ways in which arthropods impact global health and economic growth through the diseases they transmit.

ENVH 524. Residential and Institutional Environments. 3 Credits.
A study of the physical aspects of housing and institutions as they relate to human health and well-being. Coverage is also given to infection control in health-care facilities.

ENVH 525. Occupational Safety and Health Program Management. 3 Credits.
The establishment, implementation and maintenance of occupational safety and health programs. Paradigms of safety, techniques for safety training and creation of value for safety among business managers and employees are emphasized.

ENVH 526. Physical Hazards and Their Control. 3 Credits.
An in-depth examination of the varied types of physical hazards in the work environment and the methods of prevention, recognition and control.

ENVH 538. Environmental Emergencies and Disasters. 3 Credits.
This course uses a multi-disciplinary approach and draws on theory, case studies, research, and field experience to examine the global problem of environmental emergencies and disasters. Particular attention is devoted to the public health challenges posed by chemical and radiological contamination situations. Students discuss contemporary issues and controversies, complete a paper exploring current issues in the field, and spend time working in teams to craft solutions to key emergency preparedness problems.

ENVH 540. Principles of Ergonomics. 3 Credits.
An introduction to the terminology, concepts and applications of physiology, anthropometry, biomechanics and engineering to workplace and work methods design. Emphasis will be given to workplace design and work methods for job safety and health.

ENVH 541. Industrial Hygiene. 3 Credits.
An in-depth study of the chemical and physical agents responsible for occupational illness and the methods used for their measurement, evaluation and control.
ENVH 542. Industrial Hygiene Sampling Methods. 3 Credits.
An introduction to the detection and sampling alternatives used for estimating worker exposure to hazardous chemical, physical and biological agents in the occupational environment. Field and class activities are intended to simulate select occupational exposure situations and provide a basis for selection of the best evaluation techniques. Emphasis is on quantitative and qualitative methods typically used when estimating employee exposure to hazardous agents and the subjective decision making process. Pre- or corequisite: ENVH 541 or permission of the instructor.

ENVH 545. Air Pollution and Its Control. 3 Credits.
The study of air pollution in relation to air quality criteria, pollutant production, atmospheric evolution, measurement and control techniques.

ENVH 546. Physical Hazards Laboratory. 2 Credits.
Use and application of sampling methods and equipment for measurement of physical hazards in the work environment. Includes aspects such as ergonomics, noise, vibration and radiation. Prerequisites: ENVH 541 or permission of the instructor.

ENVH 548. Epidemiology and Biostatistics. 1-3 Credits.
An introductory course in the principles and practices of epidemiology and the application of statistical and mathematical design and analysis of health research studies for the understanding and control of population health and disease with emphasis on environmental applications.

ENVH 561. Hazardous Waste Management. 3 Credits.
Description of the hazardous waste problem, the fundamentals of the chemistry involved with hazardous waste transport, methods of identification, assessment, control, and disposal of toxic and hazardous waste are discussed. In addition the relevant legal statutes, risk assessment emergency response and case studies are presented. Introduction to the toxicological effects of exposure to hazardous waste is discussed.

ENVH 565. Hazardous Materials Management. 3 Credits.
The management of hazardous materials includes a wide array of interlocking regulations addressing use, manufacturing, exposure, storage, shipping and disposal. A life cycle review of hazardous materials highlighting best practices and legislation is presented. Useful in preparation for CHMM examination.

ENVH 570. Industrial Environmental Management. 3 Credits.
The course addresses day-to-day technical and management aspects of environmental compliance, as well as regulatory issues faced in industrial applications. Includes audits and inspections, air and water pollution and hazardous waste.

ENVH 595. Topics in Environmental Health. 1-3 Credits.
Advanced study of selected topics.

ENVH 598. Independent Study in Environmental Health. 1-3 Credits.
An opportunity is afforded students to undertake independent study under the direction of a faculty member. Prerequisites: permission of the Program Director.

ENVH 600. Principles of Environmental Health Science and Protection. 3 Credits.
An introduction to the chemical, physical and biological factors affecting human health and well being. The emphasis is on the application of controls to prevent disease and maximize environmental quality. (Cross-listed with CHP 602).

ENVH 603. Environmental Epidemiology. 3 Credits.
Collection methods, analysis and interpretation of epidemiologic data with environmental and occupational disease emphasis.

ENVH 610. Food Microbiology. 4 Credits.
An in-depth examination of requirements for growth of food borne disease organisms. Includes hazard analysis and critical control point methodology.

ENVH 611. Water Pollution Control. 4 Credits.
A study of the chemical, physical and biological causes of surface and groundwater pollution. Emphasis is given to onsite wastewater systems and protection of groundwater supplies.

ENVH 621. Advanced Toxicology I. 4 Credits.
An in-depth study of the adverse interaction of environmental and occupational chemical agents with humans. Students critically review articles from the current toxicology literature with regard to scientific content, methods and conclusions. Each student presents at least two reviews during the semester. Prerequisites: ENVH 543.

ENVH 632. Environmental and Occupational Health Risk Assessment. 3 Credits.
This course is an introduction to quantitative and qualitative risk analysis and examines the fundamentals of risk, focusing on environmental, occupational, and public health risks. Hazard identification, exposure assessment, dose-response evaluation, risk characterization, and risk communication are emphasized.

ENVH 643. Principles of Toxicology. 3 Credits.
An introduction to the fundamentals of toxicology with emphasis on the interaction of environmental and industrial chemicals with humans are studied. Exposure, dose response, kinetics and distribution of toxicants, metabolism of toxic agents, factors that affect toxicity and introductory chemical carcinogenesis are discussed.

ENVH 695. Selected Topics in Environmental Health. 1-3 Credits.
The study of selected topics that may not offered regularly. Special topics will appear in the schedule of classes each semester.

ENVH 722. Control of Hazards in the Workplace. 3 Credits.
Advanced methods for evaluation and control of hazards in the workplace.

ENVH 795. Selected Topics in Environmental Health. 1-3 Credits.
The study of selected topics that may not be offered regularly. Special topics will appear in the schedule of classes each semester. Prerequisites: permission of the instructor.

ENVH 822. Control of Hazards in the Workplace. 3 Credits.
Advanced methods for evaluation and control of hazards in the workplace.

ENVH 895. Selected Topics in Environmental Health. 1-3 Credits.
The study of selected topics that may not be offered regularly. Special topics will appear in the schedule of classes each semester. Prerequisites: permission of the instructor.

ENVH 998. Master's Graduate Credit. 1 Credit.
This course is a pass/fail course for master's students in their final semester. It may be taken to fulfill the registration requirement necessary for graduation. All master's students are required to be registered for at least one graduate credit hour in the semester of their graduation.

Courses

HEALTH SCIENCES Courses

HLSC 701. Introduction to Health Services. 3 Credits.

HLSC 702. Health Management. 3 Credits.
This seminar will provide students with an understanding of health care organizations and effective management. Particular attention will be given to the issues of access, cost and quality.

HLSC 705. Interprofessional Study Abroad on Global Health. 1-3 Credits.
This study abroad service learning course will introduce the student to the political, social, cultural, and ethical issues involved in prevention and health promotion globally. Students will travel another country and learn the incidence/prevalence, morbidity/mortality, and identified public health problems in specific regions and countries.

HLSC 706. Leadership in Complex Systems and Organizations. 3 Credits.
This course will focus on the leadership that comprises two types: informal and formal leadership. Competencies will include communication, knowledge of health care environment, leadership, professionalism, and business skills.

HLSC 707. Informatics and Healthcare Technology. 3 Credits.
This course will cover the use of data in health care as well as other informatics applications. Students will explore healthcare technology used to improve the delivery and evaluation of care.
HLSC 708. Evidence-Based Management for Quality Healthcare. 3 Credits.
The focus of the course is on the development of system processes to ensure quality health care. The evidence-based model will be applied to organizational systems.

HLSC 709. Multidisciplinary Approach to Health Services Research. 3 Credits.

HLSC 710. Research Design and Application. 3 Credits.

HLSC 712. Qualitative Research Methods. 3 Credits.

HLSC 713. Measurement of Health Phenomena. 3 Credits.
An overview of measurement theory with emphasis on the development, testing, and refinement of norm- and criterion-referenced data collection instruments for health-related research.

HLSC 714. Theory in the Health Sciences. 3 Credits.

HLSC 716. Competitive Resource Design and Utilization. 3 Credits.
This course focuses on the competitive design and utilization of organizational and human resources. Emphasis will be placed on the strategic process to ensure that resources are applied in ways to ensure high-quality care and excellent patient outcomes. The course will cover the business models for effective financial and personnel management of healthcare organizations. Analysis of the costs and quality of care will be performed.

HLSC 746. Epidemiology. 3 Credits.
This course examines epidemiology as a method for viewing inborn community health problems and as a body of knowledge derived from this method. Skills in using epidemiology as a method and as knowledge to solve community health problems will be included.

HLSC 751. Developmental Neonatal Physiology. 2 Credits.
This course provides an in-depth examination of human genetics, embryologic development and normal physiologic functioning of developing body systems. Mechanisms involved in cell division, gametogenesis, and inheritance patterns will be addressed. Basic genetics and epigenetics will be included. The structural and functional development of fetal systems, during critical periods, will be emphasized. Abnormalities and alterations in fetal development will be explored.

HLSC 764. Health Economics. 3 Credits.
Lecture 3 hours; 3 credits. This course describes the application of economic tools to analyze the operation of markets for health care and insurance. Topics covered include the consumption and costs of health care in the United States, the viewpoints of players in the health care market, and an overview of both supply and demand analysis and cost effectiveness analysis. Complexities of economics unique to health care will be detailed. Further, students will employ these principles in several case studies of current and classic issues in health economics. (Cross-listed with CHP 764).

HLSC 768. Practicum in Global Health. 2 Credits.
Global health related field placement (112 hours).

HLSC 771. Foundations of Advanced Neonatal Care. 3 Credits.
The foundations of advanced neonatal care course provides the theoretical and practical knowledge for the neonatal nurse practitioner or physician assistant to manage the health care needs of the neonate in the newborn nursery or level II neonatal intensive care unit.

HLSC 772. Policy and Politics of Health. 3 Credits.
This course enables the student to develop a systematic and analytical framework for understanding health care policy issues. The policy process is covered in detail. Timely policy issues also are discussed.

HLSC 773. Pharmacology for Advanced Neonatal Care. 3 Credits.
This course offers scientific inquiry into the use of pharmacologic agents in the advanced nursing care of infants, including fetal, neonatal life, and early childhood. Pharmacokinetics, pharmacodynamics, drug use in pregnancy and lactation, pharmacologic agents used in disease prevention and treatment, drug monitoring and drug safety in the home are explored.

HLSC 774. Advanced Neonatal Care: High Risk Management I. 3 Credits.
This course develops the students' ability to manage high-risk neonates. This is the second of three sequential management courses that provide the theoretical and practical knowledge for the neonatal nurse practitioner to manage the health care needs of the neonate at the highest level of nursing practice.

HLSC 775. Advanced Neonatal Care: High Risk Management II. 3 Credits.
An organ systems approach is used to explore the diagnosis and management of neonates requiring surgery and advanced technologies. Additional topics will include developmental follow-up of the medically fragile infant and withdrawal of life support in the NICU.

HLSC 776. Global Health. 3 Credits.
This course will introduce the student to the political, social, cultural and ethical issues involved in disease prevention and health promotion globally. Specific emphasis will be on incidence/prevalence, morbidity/mortality, and identified health problems in specific regions and countries. This course will also identify international health prerogatives aimed at improving health status through education and intervention.

HLSC 777. Global Environmental Health. 2-3 Credits.
The goal of this course is to guide students with a public health perspective to develop skills to identify and analyze environmental health problems globally. It is designed to provide knowledge on recognizing and evaluating major environmental health issues and risk factors in developed and developing countries by using group discussions and real-life case studies.

HLSC 780. Monitoring & Evaluating Global Health Programs. 2 Credits.
This course familiarizes students with the basic concepts, issues, theories, approaches and models in evaluation in a global public health context. Students in this course will begin to develop technical skills to conceptualize and design evaluations of global public health programs or projects. These practices include determining which evaluation approach to use in a given context, developing an evaluation plan and appropriate evaluation questions, determining the data needed to answer the evaluation questions and establishing reporting processes to provide information to program developers.

HLSC 782. One Health, One Medicine. 2 Credits.
This course will teach students the applications of multidisciplinary competencies towards solving human health challenges. The course will identify all areas of global health issues that require human, veterinary and environmental applications for solutions. One Health One Medicine is an important course for all students in Health or Environmental Sciences that are called upon to integrate multidisciplinary competencies as part of their education and career experiences.

HLSC 784. Creating Sustainable Environmental Futures. 3 Credits.
This course examines the interrelationships between individual and societal decisions and the global environment, and analyzes the consequences these interrelationships have for public health and sustainability. The course will review food, environmental quality, climate variability, sea-level rise and public health, homes-workplaces-communities, and environmental health and sustainability in the region, the nation and around the world.

HLSC 785. Issues and Opportunities in Global Health Research. 3 Credits.
This course focuses on global health research with an emphasis on cultural, political and economic influences on health in various regions and provides students opportunities to engage in inter-professional teamwork to brainstorm problem-based issues and establish research proposals.

HLSC 795. Topics in Health Sciences. 1-3 Credits.
Designed to provide the advanced student with an opportunity to study independently or in small groups and investigate specific topics of current interest in health services or health sciences.

HLSC 798. Supervised Research. 1-6 Credits.
Supervised research on a specialized topic. Can be repeated.
HLSC 801. Introduction to Health Services. 3 Credits.
Focuses on the complexities involved in providing health services to populations. Presents issues related to public health, community health, urban and rural health, healthy people/communities and health care delivery in traditional and non-traditional settings.

HLSC 802. Health Management. 3 Credits.
This seminar will provide students with an understanding of health care organizations and effective management. Particular attention will be given to the issues of access, cost and quality.

HLSC 804. Methods of Program Evaluation. 3 Credits.
Examination of various methodologies for designing and conducting public health program evaluation and research. Experimental, quasi-experimental and non-experimental procedures will be covered. Prerequisite: HLSC 810 or PAUP 853. Departmental approval required.

HLSC 805. Interprofessional Study Abroad on Global Health. 1-3 Credits.
This study abroad service learning course will introduce the student to the political, social, cultural, and ethical issues involved in prevention and health promotion globally. Students will travel another country and learn the incidence/prevalence, morbidity/mortality, and identified public health problems in specific regions and countries.

HLSC 806. Leadership in Complex Systems and Organizations. 3 Credits.
This course will focus on the leadership that comprises two types: informal and formal leadership. Competencies will include communication, knowledge of health care environment, leadership, professionalism, and business skills.

HLSC 807. Informatics and Healthcare Technology. 3 Credits.
This course will cover the use of data in health care as well as other informatics applications. Students will explore healthcare technology used to improve the delivery and evaluation of care.

HLSC 808. Evidence-Based Management for Quality Healthcare. 3 Credits.
The focus of the course is on the development of system processes to ensure quality health care. The evidence-based model will be applied to organizational systems.

HLSC 809. Multidisciplinary Approaches to Health Services Research. 3 Credits.
Uses theory and research findings from areas such as Biology, Psychology, Sociology, Economics, Urban Studies, and Health Services to achieve an understanding of health services issues and problems. Emphasizes methods of analysis and of developing alternatives related to multidisciplinary perspectives.

HLSC 810. Research Design and Application. 3 Credits.
Emphasis is on exploring the advantages/disadvantages and uses of non-experimental, quasi-experimental, and experimental designs in health-related research with application to management, education, and clinical practice. (cross-listed with PT 810). Prerequisite: graduate-level courses in research design and statistics or permission of the instructor.

HLSC 811. Quantitative Research Methods in Health Care. 3 Credits.
An applied approach to the selection and application of bivariate and multivariate statistical techniques in health services research. Emphasis is placed on handling large data sets and the use of a computer for manipulation of quantitative data. Pre- or corequisite: HLSC 710 or HLSC 810.

HLSC 812. Qualitative Research Methods. 3 Credits.
An exploration of qualitative research methods including participant observation, ethnography and the generation of grounded theory. Individual interviews and focus group methods will be covered and historical, content analysis, phenomenological and montage approaches will also be discussed. Health related examples of published research in a variety of fields will be utilized to exemplify the methods.

HLSC 813. Health Outcomes Research. 3 Credits.
An overview of measurement theory with emphasis on the development, testing, and refinement of norm- and criterion-referenced data collection instruments for health-related research. Prerequisites: graduate-level courses in research design and statistics or permission of the instructor.

HLSC 814. Theory in the Health Sciences. 3 Credits.
Introduces the philosophy of science by studying the nature and purposes of theory for the health sciences. Standards for evaluation of theories will be described. Selected theories and supporting research from the health sciences literature will be discussed and critically evaluated.

HLSC 815. Decision Analysis in Health Care. 3 Credits.
This course teaches students the art and science of decision making. It covers expected utility theory, decision tree analysis, cost-benefit analysis, and the psychological aspects of the decision-making process in the context of health policy research.

HLSC 816. Competitive Resource Design and Utilization. 3 Credits.
This course focuses on the competitive design and utilization of organizational and human resources. Emphasis will be placed on the strategic process to ensure that resources are applied in ways to ensure high-quality care and excellent patient outcomes. The course will cover the business models for effective financial and personnel management of healthcare organizations. Analysis of the costs and quality of care will be performed.

HLSC 820. Health Care Delivery System. 3 Credits.
This course provides the student with an opportunity to analyze the American health care system. The health care system is composed of complex organizational dynamics and structures which predicate the interaction between the major components of the system: personnel who provide service; institutions in which care is provided; financing mechanisms which pay for care; and the government which attempts to regulate it. This course is designed for in-depth analysis and synthesis of all aspects of health care delivery with an emphasis on improving the delivery and access to care.

HLSC 846. Epidemiology. 3 Credits.
This course examines epidemiology as a method for viewing inborn community health problems and as a body of knowledge derived from this method. Skills in using epidemiology as a method and as knowledge to solve community health problems will be included.

HLSC 861. Advanced Quantitative Methods. 3 Credits.
This course adopts an applied approach to teaching health professions students the necessary competencies and skills in advanced quantitative methods. Topics include handling missing data, survey design and exploratory factor analysis, mediation and moderation analysis, and an introduction to confirmatory factor analysis and structural equation modeling (SEM). Prerequisite: HLSC 811.

HLSC 864. Health Economics. 3 Credits.
This course describes the application of economic tools to analyze the operation of markets for health care and insurance. Topics covered include the consumption and costs of health care in the United States, the viewpoints of players in the health care market, and an overview of both supply and demand analysis and cost effectiveness analysis. Complexities of economics unique to health care will be detailed. Further, students will employ these principles in several case studies of current and classic issues in health economics. (Cross-listed with CHP 764).

HLSC 868. Internship in Health Sciences. 3 Credits.
Supervised health services field experiences or health sciences laboratory experiences. A completed research project which is publishable or presentable at a professional conference is required to complete the course.

HLSC 872. Policy and Politics of Health. 3 Credits.
This course enables the student to develop a systematic and analytical framework for understanding health care policy issues. The policy process is covered in detail. Timely policy issues are also discussed.
HLSC 873. Planning Proposals and Developing Grants in Health Research. 3 Credits.
- Designed as a 'hand-on' approach in effective grantsmanship, this course will guide the student from the identification of potential funding sources through proposal development. Highlights include program planning, nonprofit status, governmental/foundation corporate trends, local resources and grants administration.

HLSC 874. Administration in Health Sciences. 3 Credits.
- This course will provide an overview of health delivery systems, organizational behavior, and theoretical foundations for managerial and executive leadership in health care facilities. Emphasis will be placed on utilizing best practices in leadership to promote motivation and quality improvement, strategic planning, information technology, and cultural awareness.

HLSC 875. Comprehensive Health Planning. 3 Credits.
- This course emphasizes the principles and processes of program planning, including a consideration of objectives, priorities, policy choices, assessment of resources, implementation, and evaluation. The student will gain practical experience in program development by developing a planning document.

HLSC 876. Global Health. 3 Credits.
- This course will introduce the student to the political, social, cultural and ethical issues involved in disease prevention and health promotion globally. Specific emphasis will be on incidence/prevalence, morbidity/mortality, and identified health problems in specific regions and countries. This course will also identify international health prerogatives aimed at improving health status through education and intervention.

HLSC 881. Dissertation Seminar. 3 Credits.
- This course will assist students in developing a dissertation proposal. Steps in the research process will be reviewed as students submit drafts of their proposal for faculty and peer review. Problem formulation, integrating theoretical frameworks, preparing for human subjects review and outlining data analysis techniques for hypothesis testing will be discussed. Students will be introduced to University guidelines related to dissertations and other resources to assist them in their task.

HLSC 889. Colloquium I. 1 Credit.
- This course is the first in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.

HLSC 890. Colloquium II. 1 Credit.
- This course is the second in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.

HLSC 891. Colloquium III. 1 Credit.
- This course is the third in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.

HLSC 892. Colloquium IV. 1 Credit.
- This course is the fourth in a series of colloquial courses in which doctoral level students receive presentations and present research and current topics of interest in health related professions.

HLSC 895. Topics in Health Sciences. 1-3 Credits.
- Designed to provide the advanced student with an opportunity to study independently or in small groups and investigate specific topics of current interest in health services. Prerequisites: Ph.D. standing or permission of the graduate program director.

HLSC 897. Independent Study. 1-3 Credits.
- Individualized study selected by the student in collaboration with a faculty member. Area of study to be supervised and approved by a faculty member with the approval of the graduate program director. Prerequisites: Admission to Health Services PhD program and permission of graduate program director.

HLSC 898. Supervised Research. 1-6 Credits.
- Supervised research on a specialized topic. Can be repeated.

HLSC 899. Dissertation. 1-12 Credits.
- Available for pass/fail grading only. An approved research project written under the supervision of a faculty advisor, in which the student demonstrates the capacity to design and complete independent applied research. The completed project must be approved by the dissertation committee.

HLSC 999. Doctoral Graduate Credit. 1 Credit.
- This course is a pass/fail course doctoral students may take to maintain active status after successfully passing the candidacy examination. All doctoral students are required to be registered for at least one graduate credit hour every semester until their graduation.

MASTER OF PUBLIC HEALTH Courses

MPH 610. Introduction to Public Health. 1 Credit.
- This introductory readings course provides students with an overview of the public health sector from a local, national, and global perspective. The history of public health and recent events leading to a complete transformation of service delivery are two of the topics presented.

MPH 611. Social and Behavioral Sciences for Public Health. 3 Credits.
- This is a social and behavioral sciences core course for the MPH program. Psychological, social, and cultural concepts and models relevant to health and disease in society are reviewed and critiqued. Students will learn about different theoretical perspectives and how to apply appropriate social and behavioral models to public health programs. Students will learn how to select and apply appropriate social and behavioral models to the design of public health interventions and policies. The course will also cover existing social inequalities in health status related to race/ethnicity, social class, and gender, and the critical intersection between social risk factors, behavioral risk factors, and the development and implementation of public health interventions. Social ecological models that influence population health at multiple levels are emphasized.

MPH 612. Statistical Reasoning for Public Health. 3 Credits.
- This course is designed for student majoring in public health and health-related disciplines. The course introduces basic concepts in biostatistics and fundamental methods in statistical analysis. Although formulae and computational elements will be incorporated into the lecture, the course is designed to teach students how to make informed decisions from a given set of data collected from a health research study. This process includes exploring data, reviewing all the underlying statistical assumptions, summarizing and analyzing the data using common descriptive and inferential statistical methods, and finally reporting and interpreting the statistical results. Students will utilize statistical software to perform data analysis and answer research questions. The overall goal of this course is to assist students to develop a process for critical statistical thinking that is important in many areas of scientific research.

MPH 613. Environment, Society, and Health. 3 Credits.
- This course provides an introduction to 21st century environmental health science. In addition to covering some of the traditional environmental factors affecting the health of individuals and communities in the region, the nation, and around the world, the class familiarizes students with a broad range of contemporary and emerging environmental health challenges and issues. In addition, through a series of guest presentations by experienced practitioners in the field, the course introduces students to the “real world” of environmental health practice.

MPH 615. Systems Thinking and Health Management. 3 Credits.
- Students will learn the practice of systems thinking, which includes the ability to integrate multiple perspectives and synthesize them into a framework or model that encompasses the various ways in which a system might react to policy choices.

MPH 616. Research Methods in Public Health. 3 Credits.
- This is a foundational course in research methods that will provide an overview of the basic principles of research design, methods, measurements, data collection and data management in the field of public health. Students will learn the differences between quantitative, qualitative and mixed methods approaches to public health research, as well as how to formulate and evaluate research questions. The overall goal of this course is to provide practical, step-by-step guidance to the research process under the scientific method framework. Prerequisites: MPH 612 and HLSC 746.
MPH 622. Environmental Health Law, Justice and Governance. 3 Credits.
This course surveys the basic legal concepts affecting environmental health services and program enforcement and administration. It is designed to provide a fundamental background of environmental and public health law for public health officers and other environmental health workers to fulfill their respective roles more successfully. Workplace occupational health and safety will not be addressed in depth in this course. Pre- or corequisite: MPH 613.

MPH 630. Health Communication and Social Marketing for Public Health. 3 Credits.
This course aims to provide students with a critical understanding of how social marketing offers a useful approach to address a variety of public health problems. It will emphasize social marketing within a broader strategic health communication framework. Students will learn how social marketing and strategic health communication can be applied effectively to address public health issues and how to design effective health communication programs. Pre- or corequisite: MPH 611.

MPH 632. Environmental and Occupational Health Risk Assessment. 3 Credits.
This course is an introduction to risk assessment, as applied to environmental and workplace hazards. It examines the fundamental concepts of risk. Students will learn the United States Environmental Protection Agency (USEPA) standard and advanced methodology for quantitative risk assessment including hazard identification, exposure assessment, dose-response modeling, risk characterization, and risk communication. Utilization of qualitative assessment methods and ecological risk assessment are also explored. Pre- or corequisite: MPH 613.

MPH 640. Health Disparities and Social Justice. 3 Credits.
This course provides an introduction to the topic of global health disparities through an in-depth examination and discussion of the relationship between social injustice and inequitable health outcomes. Students will be introduced to the social and environmental determinants of health disparities and the pathways and mechanisms leading to inequitable health outcomes in vulnerable groups, as well as strategies for addressing these determinants to improve health. Pre- or corequisite: MPH 611.

MPH 643. Principles of Toxicology. 3 Credits.
An introduction to the fundamentals of toxicology with emphasis on the interaction of environmental and industrial chemicals with humans are studied. Exposure, dose response, kinetics and distribution of toxicants, metabolism of toxic agents, factors that affect toxicity and introductory chemical carcinogenesis are discussed.

MPH 651. Health Promotion Theory and Practice. 3 Credits.
This course provides students with a comprehensive overview of the practical and theoretical principles and skills needed to plan, implement, and evaluate health promotion programs in a variety of settings. The course will help students apply constructs from theories to understand the determinants of health behaviors and emphasizes the importance of addressing health behavior change at the individual, interpersonal, organizational, community and societal levels of the social ecological model. Pre- or corequisite: MPH 611.

MPH 661. Program Planning and Evaluation. 3 Credits.
This course provides public health graduate students with a comprehensive overview of the practical and theoretical principles and skills needed to plan, implement, and evaluate health programs in a variety of settings. Pre- or corequisite: MPH 611.

MPH 669. Applied Practice Experience. 1-3 Credits.
This course provides students with an opportunity to engage in public health practice in the community or in a working environment. Applied practice experience (APE) is based on applied learning, problem-based and competency-linked activities. Students gain competence in public health practice relevant to the concentration area selected. The applied learning will require students to complete a project related to an actual public health issue that is a focus within a specific organization. Pre- or corequisite: Approval of Practicum Director and/or Program Director.

MPH 670. Applied Mixed-Methods Research in Health Promotion. 3 Credits.
Examines multicultural consideration across health promotion and public health domains, and developing a culturally sensitive and effective plan for health behavior change using mixed-methods research.

MPH 688. Grant Writing for Public Health Practice. 3 Credits.
This course covers issues and problems concerned with the development of grants and contracts as they relate to the health professions. The course focuses on the multiple roles of funding agencies and the importance of matching the interests of the grant seeker with the corresponding funding agency.

MPH 689. Integrative Learning Experience. 1-3 Credits.
This is the culminating course for the MPH program. Students demonstrate an ability to integrate and synthesize foundational and concentration-specific competencies from their MPH program coursework. Students complete assignments that address timely public health issues culminating in high quality written products and an e-portfolio that demonstrate the analysis, synthesis and intersection of course work and concurrent practicum experiences. Students from all tracks are required to complete this course prior to graduation.

MPH 712. Applied Biostatistics. 3 Credits.
This course presents modern methods for analyzing data from epidemiologic and public health studies using the latest statistical methods. Emphasis will also be placed on technical and statistical report writing. Pre- or corequisite: Satisfactory academic performance with B or above in MPH 746, MPH 612 and MPH 616 or approval from instructor or program director.

MPH 713. Applied Statistical Programming. 3 Credits.
This course covers programming and computing techniques using contemporary statistical packages. Emphasis is placed on practical issues relating to organizing, modifying, and preparing data for analysis. Pre- or corequisite: Satisfactory academic performance with B or above in MPH 746, MPH 612 and MPH 616 or approval from instructor or program director.

MPH 716. Application of Epidemiological Methods. 3 Credits.
The course aims to prepare students with hands-on experience in producing common epidemiological measures while critically evaluating the quality of data and the design of epidemiological investigations. Pre- or corequisite: Satisfactory academic performance with B or above in MPH 746, MPH 612 and MPH 616 or approval from instructor or program director.

MPH 717. Epidemiology of Infectious Diseases. 3 Credits.
This course focuses on the epidemiology of infectious diseases from a public health perspective. It applies traditional and contemporary epidemiological methods used to deal with infectious diseases. Pre- or corequisite: Satisfactory academic performance with B or above in MPH 746, MPH 612 and MPH 616 or approval from instructor or program director.

MPH 746. Epidemiology. 3 Credits.
This course examines epidemiology as a method for viewing inborn community health problems and as a body of knowledge derived from this method. Skills in using epidemiology as a method and as knowledge to solve community health problems will be included.

MPH 761. Advanced Quantitative Methods. 3 Credits.
This course adopts an applied approach to teaching health professions students the necessary competencies and skills in advanced quantitative methods. Topics include handling missing data, survey design and exploratory factor analysis, mediation and moderation analysis, and an introduction to confirmatory factor analysis and structural equation modeling (SEM). Pre- or corequisite: MPH 612 and MPH 746.

MPH 776. Global Health. 3 Credits.
This course will introduce the student to the political, social, cultural and ethical issues involved in disease prevention and health promotion globally. Specific emphasis will be on incidence/prevalence, morbidity/mortality, and identified health problems in specific regions and countries. This course will also identify international health prerogatives aimed at improving health status through education and intervention.
MPH 778. Global Environmental Health. 3 Credits.
The goal of this course is to guide students with a public health perspective to develop skills to identify and analyze environmental health problems globally. It is designed to provide knowledge on recognizing and evaluating major environmental health issues and risk factors in developed and developing countries by using group discussions and real-life case studies. Pre- or corequisite: MPH 613.

MPH 784. Creating Sustainable Environmental Futures. 3 Credits.
This course examines the interrelationships between individual and societal decisions and the global environment, and analyzes the consequences these interrelationships have for public health and sustainability. The course is organized into four in-depth modules: (1) toxic substances and environmental disasters, (2) food, sustainability, environmental quality and health, (3) climate, sea-level rise and public health, and (4) communities, sustainability and health. Students engage in an extensive examination of each area, analyze the public health implications, and consider various strategies for improving individual and population health, and enhancing sustainability, in the local area, the region, the nation and around the world.

MASTER OF PUBLIC HEALTH Courses

MPHO 600. Introduction to Public Health Practice. 1 Credit.
This course provides an introduction to the multidisciplinary field of public health. Students will learn the history, core functions, and roles of the US public health system through grounding in the 12 foundational public health knowledge areas.

MPHO 605. Introduction to Biostatistics for Public Health. 3 Credits.
This course introduces fundamental concepts in biostatistics. Students will learn how to analyze and interpret numeric data using statistical tools to investigate and evaluate public health issues.

MPHO 608. Environment and Public Health. 3 Credits.
This course provides an introduction to 21st century environmental health science and practice. In addition to covering foundational environmental issues affecting people's health, the class familiarizes students with contemporary environmental health challenges such as climate change, sea level rise, antibiotic resistance, food and sustainability, plastics and environmental health, disaster preparedness, lead poisoning, radiation safety and health, environmental justice, cultural competence, and environmental risk communication.

MPHO 610. Introduction to Public Health Practice. 1 Credit.
This introductory readings course provides students with an overview of the public health sector from a local, national, and global perspective. The history of public health and recent events leading to a complete transformation of service delivery are two of the topics presented.

MPHO 611. Social and Behavioral Sciences for Public Health. 3 Credits.
This course reviews and critiques psychological, social, and cultural concepts and models relevant to health and disease in society. Students will learn how to select and apply appropriate social and behavioral models to the design of public health interventions and policies. Existing social inequities in health status related to race, social class, and gender will be explored, as well the intersection between risk factors and the development/implementation of public health interventions.

MPHO 613. Environmental Sciences for Public Health Practice. 3 Credits.
This course provides an introduction to the chemical, physical, and biological factors affecting human health and well-being. The application of controls to prevent disease and maximize environmental quality is emphasized.

MPHO 614. Principles of Epidemiology. 3 Credits.
This course will introduce the principles and basic methods of epidemiology for applications in public health. These include measures of disease frequency and association, study design, sources of errors in epidemiological studies, validity and reliability of diagnostic and screening tests, causation, and outbreak investigations.

MPHO 616. Research Methods in Public Health. 3 Credits.
Public health professionals require skills to identify problems that face population groups, and to delineate ways to solve them. Often this necessitates conducting small- or large-scale investigations on their own, or as a member of a project team. The goal of this course is to provide practical, step-by-step guidance to the research process in public health.

MPHO 620. Health Management and Systems Thinking. 3 Credits.
In this course, students will review the structure and functions of American and international healthcare systems, public health practice, and managerial responsibilities. Additionally, this course will introduce students to the practice of systems thinking in public health and the influence of systems thinking on public health policy.

MPHO 622. Environmental Health Law, Justice and Governance. 3 Credits.
This course surveys the basic legal concepts affecting environmental health services and program enforcement & administration. It is designed to provide a fundamental background of environmental and public health law for public health officers and other environmental health workers to fulfill their respective roles more successfully.

MPHO 630. Health Communication and Social Marketing for Public Health. 3 Credits.
This course examines social marketing concepts and tools for influencing health behavior change. Students learn how to design, implement, and evaluate strategies for social marketing campaigns.

MPHO 632. Environmental and Occupational Health Risk Assessment. 3 Credits.
This course is an introduction to risk assessment, as applied to environmental and workplace hazards. It examines the fundamental concepts of risk. Students will learn the United States Environmental Protection Agency (USEPA) standard and advanced methodology for quantitative risk assessment including hazard identification, exposure assessment, dose-response modeling, risk characterization, and risk communication. Utilization of qualitative assessment methods and ecological risk assessment are also explored.

MPHO 633. Financing Healthcare. 3 Credits.
Students will examine financial evaluation of the health care industry, the source of funds, and the effects of changing patient policies. Other topics of interest will be financial strategies, budgets and capital outlay. Cross-listed with CHP 633.

MPHO 640. Health Disparities and Social Justice. 3 Credits.
This course provides an introduction to the topic of global health disparities through an in-depth examination and discussion of the relationship between social injustice and inequitable health outcomes. Students will be introduced to the behavioral, social and environmental determinants of health disparities and the pathways and mechanisms leading to inequitable health outcomes in vulnerable groups, as well as strategies for addressing these determinants to improve health.

MPHO 643. Principles of Toxicology. 3 Credits.
This course is an introduction to the basic principles of toxicology, and the interactions between toxic agents and living systems. The course consists of a study of general principles, dose response, toxin recognition and evaluation, chemicals, the human environment, and ecological toxicology.

MPHO 651. Health Promotion Theory and Practice. 3 Credits.
This course provides public health promotion graduate students with a comprehensive overview of the practical and theoretical principles and skills needed to plan, implement, and evaluate health promotion programs in a variety of settings. The course will help students apply constructs from theories to understand the determinants of health behaviors and emphasizes the importance of addressing health behavior change at the individual, interpersonal, organizational, community and societal levels of the social ecological model.
This course examines the availability, use of interpretation of data obtained from traditional and new data systems used for population health monitoring. Included are public health surveillance systems, vital statistics, hospital discharge data, Health Plan Employer Data and Set (HEDIS), immunization information, school health data, 1996 Health Insurance Portability and Accountability Act (HIPAA), and regulatory agency data related to health.

**MPHO 661. Program Planning and Evaluation. 3 Credits.**

This course provides public and community health graduate students with a comprehensive overview of the practical and theoretical principles and skills needed to plan, implement, and evaluate health programs in a variety of settings.

**MPHO 669. Applied Practice Experience. 3 Credits.**

In this course, students build on their earlier practice activities (i.e., Practice Labs) and undertake an extensive, hands-on activity at a field-based practice site. The Practice Labs, which are completed prior to taking this course, are designed to meet foundational and track competencies as well as prepare students for an on-site work experience.

**MPHO 670. Cultural Issues in Health Promotion and Education. 3 Credits.**

This course provides an introduction for multicultural communication for health promotion and disease management. Topics to be covered include how to work collaboratively in diverse groups with an understanding of health behaviors, values, and health benefits.

**MPHO 673. Policy and Politics of Health. 3 Credits.**

This course enables the student to develop systematic and analytical frameworks for understanding health and healthcare policy issues. It will introduce the policy process, background research necessary for policy implementation, and implementation strategies.

**MPHO 680. Global Health Issues. 3 Credits.**

An examination of the political, social, cultural, and ethical issues for disease prevention and health promotion in developing countries. Students will learn to identify international health prerogatives aimed at improving health status through education and intervention.

**MPHO 686. Legal Aspects of Health Services. 3 Credits.**

This course examines the legal requirements affecting the health care industry, including a survey of the basic concepts and content in the major areas of health law, an explanation and identification of sources of legal authority, and a familiarity with legal language.

**MPHO 688. Grant Writing for Public Health Practice. 3 Credits.**

This course covers issues and problems concerned with the development of grants and contracts as they relate to the health professions. The course focuses on the multiple roles of funding agencies and the importance of matching the interests of the grant seeker with the corresponding funding agency.

**MPHO 689. Integrative Learning Experience. 3 Credits.**

This is the culminating course for the MPH program. Students demonstrate an ability to integrate and synthesize foundational and concentration-specific competencies from their MPH program coursework. Students complete assignments that address timely public health issues culminating in high quality written products and an e-portfolio that demonstrate the analysis, synthesis and intersection of course work and concurrent practicum experiences. Students from all tracks are required to complete this course prior to graduation.

**MPHO 695. Topics in Public Health. 1-3 Credits.**

This course presents modern methods for analyzing data from epidemiologic and public health studies using the latest statistical methods. Emphasis is placed on practical, applied theories/concepts, aspects of methods for the analysis of diverse types of data including from observational studies, and the use of a computer for quantitative data management. Emphasis will also be placed on technical and statistical report writing.

**MPHO 713. Applied Statistical Programming. 3 Credits.**

This course covers programming and computing techniques using contemporary statistical packages. Emphasis is placed on practical issues relating to organizing, modifying, and preparing data for analysis.

**MPHO 716. Application of Epidemiological Methods. 3 Credits.**

The course aims to prepare graduate students with hands-on experience in producing common epidemiological measures while critically evaluating the quality of data and the design of epidemiological investigations.

**MPHO 717. Epidemiology of Infectious Diseases. 3 Credits.**

This course focuses on the epidemiology of infectious diseases from a public health perspective. It applies traditional and contemporary epidemiological methods used to deal with infectious diseases.

**MPHO 776. Global Health. 3 Credits.**

This course introduces students to the political, social, cultural, environmental, and ethical issues globally involved in disease prevention and health promotion. Specific emphasis is on incidence/prevalence, morbidity/mortality, and identified health problems in specific regions and countries. This course also identifies global health prerogatives aimed at improving health status through education and intervention.

**MPHO 778. Global Environmental Health. 3 Credits.**

The goal of this course is to guide students with a public health perspective to develop skills to identify and analyze environmental health problems globally. It is designed to provide knowledge on recognizing and evaluating major environmental health issues and risk factors in developed and developing countries by using group discussions and real-life case studies.

**MPHO 784. Creating Sustainable Environmental Futures. 3 Credits.**

This second-year MPH course examines the interrelationships between individual and societal decisions and the global environment, and the consequences these interrelationships have for public health. Students engage in an in-depth examination of key environmental health issues, analyze the public health implications, and consider various strategies for improving individual and population health, and enhancing sustainability, in the local area, the region, the nation and around the world.