



2019 Upstate MPH Program Course Descriptions

This document contains brief descriptions of Upstate MPH courses.

**Department of Public Health & Preventive Medicine
Upstate Medical University**

Upstate MPH Course Descriptions

MPHP 601: Principles of Epidemiology

Periods Offered: Fall & Summer

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** This course introduces the basic principles of epidemiology applied to public health problems. The focus of this course is on epidemiologic measures and study designs. Topics covered in this course include disease transmission, levels of prevention, morbidity and mortality, surveillance, screening, descriptive and analytic study designs, bias, measures of association, causation, and ethical and professional issues in epidemiology. The application of epidemiology for the evaluation of health services and screening programs and the influence of epidemiology on public policy will be presented.

MPHP 602: Principles of Biostatistics

Periods Offered: Fall & Summer

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** This course introduces the basic principles of biostatistics and requires students to apply these principles to describe and analyze public health data. Topics include descriptive statistics, probability distributions, point and interval estimation of population parameters, and hypothesis testing. A variety of one- and two-sample parametric and non-parametric tests for continuous and categorical data are also covered, as are one-factor ANOVA and simple linear regression. Students will analyze data using SPSS software, interpret results and present findings in a variety of formats.

MPHP 603: Principles of Environmental Health

Periods Offered: Spring

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** This course familiarizes students with the major domains of environmental health and environmental sciences: environmental social justice, risk assessment and risk management, healthy housing and indoor air pollutants, infectious disease, water quality, occupational health and safety, toxicology, liquid and solid waste, the built environment, energy resources, outdoor air pollution, food quality and security, and global health. Student will learn how to critically appraise the literature to address an environmental event from a public health perspective. The course will use lectures, reading, and videos to deliver content and will require students to work in groups to explore different domains, content, and perspectives in environmental health.

MPHP 604: Social and Behavioral Dimensions of Public Health

Periods Offered: Spring

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** This course introduces students to the social and behavioral sciences used to explain differences in society. In addition, the course focuses on behavioral factors that may influence the environment and the interactions within society. The course focuses on theories related to human behavior – individual self, interaction between individuals and the interaction within societies. The course reviews community level theories that influence health behaviors. This helps students understand how to apply theory to research and program planning and evaluation designs. This course threads in health disparities and the impact of the social, biological, physical, and cultural factors that affect public health.

MPHP 606: Public Health Policy

Periods Offered: Fall

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** The purpose of this course is to introduce students to the essential elements of health policy and policy analysis, and to explore how health policy shapes the health care environment and impacts population health. Concepts of public health policy will be reinforced through case studies and discussions about policies in action at the international, national, and local levels.

MPHP 607: Public Health Administration

Period Offered: Fall

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** This course provides students with foundational knowledge of public health core functions and essential services. Students receive a grounding in the fundamentals necessary to approach management and administration of public health organizations. Using the framework of public health accreditation, this course addresses topics such as community health assessment, community engagement, community improvement planning, strategic planning, human resource management, budgeting, quality improvement, and systems thinking.

MPHP 628: Service Learning and Community Health

Period Offered: Fall, Spring

Description: **This is an elective course in the Master of Public Health Program Curriculum.** This elective introduces basic principles of community health from the perspective of viable community organizations invested in promoting health and wellness. As Upstate students you will be providing a valuable service to the community while learning from and about the community. The format of the course is highly interactive, allowing students to learn about their role as future health care professionals and their impact on the health of the community. This course has **two** components: 1) *In-Class Sessions*: Students will be required to attend, participate in, and critically reflect on the learning activity as it relates to community health issues. Sessions will be held each month for (2) hours each for a total of (16) contact hours; the first hour will typically consist of a lecture; the second hour will include small group work and discussion; 2) *Planned Service Activities*: Students will engage in a minimum (64) hours of planned service activities which is integrally related to the academic subject matter of the course.

MPHP 629 Refugee Health in Our Community – A Service Learning Experience

Period Offered: Fall, Spring

Description: **This is an elective course in the Master of Public Health Program Curriculum.** This course provides a unique opportunity to be paired with a newly resettled refugee family in Syracuse, partner with community agencies and engage with students across disciplines (medicine, public health, social work). Students will have classroom and community experiences that allow them to better understand medical, social and cultural issues that impact the health of the local refugee population we serve. These partnerships will inevitably provide the opportunity for advocacy on behalf of a vulnerable population we all strive to support.

MPHP 647: Research and Writing for Public Health

Period Offered: All

Description: **This is an elective course in the Master of Public Health Program Curriculum.** Students will learn several aspects of writing for research, including the identification of a research question and appropriate methodology, conducting and writing a focused literature review (or Introduction/Background section of a

paper), documenting a methodological approach, running and writing an analysis, and interpreting results in a discussion/conclusion section.

MPHP 649: Public Health & Biopsychosocial Primary Care

Periods Offered: Fall

Description: **This is a concentration course in the Population Health for Clinicians concentration.** This course is intended for students with clinical interests or backgrounds, and covers the application of the Biopsychosocial Model of Care to primary care settings. In the process students apply population-level, public health skills to the management of individual patients or clients. The course includes discussion of cultural competency and humility, social determinants of health, health disparities, motivational interviewing and stages of change, the chronic care model, and stages-of-change theory. Students encounter a standardized patient who presents with a combination of newly-emergent chronic biological illness, co-morbid behavioral symptoms, and social stressors, in a formative session. **Permission of instructor required.**

MPHP 652: Infectious Disease Epidemiology

Periods Offered: Spring

Description: **This is an elective course in the Master of Public Health Program Curriculum.** Infectious diseases have historically and are currently a cause of considerable morbidity and mortality in both the developing and developed world. We have come to appreciate the role of developing countries in providing the environment for infectious diseases to emerge and the proximity of the global community and its vulnerability for global pandemics. Infectious disease epidemiology is the study of the causes, distribution, and control of infectious diseases in a population. This course will explore the epidemiology of globally important infectious diseases and will cover basic epidemiologic methods, pathogenesis of selected infectious diseases, and case-studies on performing outbreak investigations and developing population studies to understand the spread, transmission and prevention of infectious diseases. Particular emphasis will be placed on understanding laboratory techniques for the identification and quantification of infectious agents and its use during outbreak investigations. This course is designed to provide an introduction to infectious disease epidemiology and will focus on the tools of basic epidemiology in identifying, preventing and controlling infectious disease problems. **Pre-req: MPHP 601 Principles of Epidemiology.**

MPHP 653: Chronic Disease Epidemiology

Periods Offered: Fall

Description: **This is an elective course in the Master of Public Health Program Curriculum.** This course will apply the methods and principles of epidemiology and biostatistics to the study of chronic diseases in the US and elsewhere. Diseases of interest include: cancer, cardiovascular disease, asthma and allergy, obesity/diabetes/metabolic syndrome, and musculoskeletal disorders. Theories regarding the development of chronic disease will be discussed as will specific mechanisms for individual disease development (pathology, biology, social, economic, political). The burden of specific diseases (prevalence, incidence, distribution by population characteristics) as well as risk and protective factors will be highlighted along with preventive strategies. Methodological issues in the study of chronic diseases also will be discussed. **Pre-reqs: MPHP 601 Principles of Epidemiology and MPHP 602 Principles of Biostatistics.**

MPHP 654: Grant Writing in Public Health

Period Offered: Fall (alternating years)

Revised 06/24/2019

Description: **This is an elective course in the Master of Public Health Program Curriculum.** This course is a hands-on course in how to prepare large research and program grant proposals. The course will cover related topical areas, with an emphasis upon research and evaluation methods, and will also include grant administration (rules, overhead etc.), funding source identification and relationship building, the role of the literature review, IRB and other regulatory issues, peer review and funding decisions, and research “culture.” Students who have specific funding opportunities they would like to pursue can use this course to create a draft of this proposal. Students will be familiar with the planning, writing, and managing requests for funding in a research context, and how to manage research projects once funded. The main work product of this course will be the draft of a major proposal, including a background section and review of the relevant scholarly literature, a detailed description of program or intervention (as appropriate), a detailed description of the methods to be used in conducting the research project or program evaluation, and a budget and narrative budget justification. **Pre-req: * Students should have taken at least one prior course in Research Methods, Program Evaluation, or Statistics (e.g. MPHP 602, MPHP 657, MPHP 660, MPHP 661, or equivalent), or obtain instructor approval before enrolling. Additionally, it is highly advisable that incoming students have a project in mind for development into a funding proposal.**

MPHP 655: Advanced Epidemiology

Period Offered: Fall

Description: **This is a concentration course in the Data and Analytics and Population Health for Clinicians concentrations.** This course applies advanced principles and methods in epidemiologic research. The focus of this course is the design, conduct, analysis and interpretation of epidemiologic studies. Topics include determining causal inference, selection of an appropriate study design, sampling methodologies, data collection and measurement techniques, reliability and validity, selection of appropriate statistical tools, and evaluation of bias, confounding and effect modification. **Pre-reqs: MPHP 601 Principles of Epidemiology, MPHP 602 Principles of Biostatistics, and MPHP 657 Public Health Research Methods.**

MPHP 657: Public Health Research Methods

Period Offered: Spring

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** This course introduces students to research methods commonly used in public health, and covers quantitative, qualitative and mixed methods approaches. Course topics include identifying a study question and study hypotheses, study design specifics, data acquisition methods, survey construction (questions and format), data management principles, qualitative & quantitative analysis methods, as well as the write up and dissemination of results. Through homework and projects, students develop a survey, develop and manage a research data base using SPSS, run appropriate data analyses in SPSS, interpret and summarize the results, and prepare a presentation of their research findings in a typical presentation format used at a scientific meeting. **Pre-reqs: MPHP 601 Principles of Epidemiology and MPHP 602 Principles of Biostatistics. Students will be expected to have introductory level knowledge of SPSS and a copy of this software.**

MPHP 658: Economics for Public Health Practitioners

Periods Offered: Fall (alternating years)

Description: **This is an elective course in the Master of Public Health Program Curriculum.** This course is an introductory health economics course aimed at public health practitioners. Prior economics coursework is not required. The course will provide the student with a broad foundation in the flow of funds through the health care system, the demand and supply of health care, provider remuneration, financing of health services, managed care, health care spending and global comparisons of health care expenditures. The class

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will provide an understanding of the concepts and practical applications of cost-benefit and cost-effectiveness analyses. Economic concepts will be examined through public health examples.

MPHP 660: Public Health Program Planning and Evaluation

Periods Offered: Spring

Description: **This is a foundational course in the Master of Public Health Program Curriculum.** This course teaches students to systematically plan and evaluate public health interventions. Program planning is the organized design of a targeted intervention (i.e. the program) to meet a discrete health-related problem; evaluation is the examination of the utilization, delivery, and quality of that intervention. The purpose of this course is to equip students with the knowledge, strategies, and skills required to plan, implement, and evaluate health interventions and health promotion programs. This course provides the basic principles and processes associated with the planning and evaluation cycle: community needs assessment; program plan; evaluation framework; data collection plan to evaluate program outcomes; tools and strategies for collecting and analyzing program data; and disseminate program results. **Pre-req/Co-req: MPHP 601 Principles of Epidemiology and MPHP 604 Social and Behavioral Dimensions of Public Health.**

MPHP 661: Advanced Biostatistics

Periods Offered: Fall

Description: **This is a concentration course in the Data and Analytics and Population Health for Clinicians concentrations.** This course focuses on applying general principles and methods of general linear modeling to the analysis of continuous and categorical data. Topics include simple and multiple linear regression, logistic regression, single and multi-factor analysis of variance (ANOVA), analysis of covariance (ANCOVA) and ANOVA for repeated measures. Knowledge of course content is applied to the development and completion of a research project. Project components include formulation of research questions and hypotheses, evaluation and selection of public-access or other available datasets for research, data cleaning and analysis using statistical software, and interpretation and presentation of results in graphic and oral formats. **Pre-req: MPHP 602 Principles of Biostatistics**

MPHP 688: Principles of GIS for Public Health

Periods offered: Spring

Description: **This is an elective course in the Master of Public Health Program Curriculum.** This course is designed to introduce the basic principles and methods of GIS and enable the student to apply these skills and knowledge to investigate public health problems. It is a time-sensitive hybrid course that incorporates independent study using on-line modules and in-class discussions of GIS-related articles from the literature. The final project is designed to integrate and apply skills learned throughout the semester and includes presentations of methods and findings in a variety of formats. **Pre-req: MPHP 602 Principles of Biostatistics.** **Access to a PC with Windows OS and ArcGIS software. ArcGIS software does not run on a Macintosh operating systems!**

MPHP 689 Advanced Qualitative Methods

Periods offered: Spring

Description: **This is a concentration course in the Data and Analytics concentration.** The purpose of this course is to help prepare MPH students with a qualitative skillset for both research and evaluation. Qualitative research focuses on the analysis of qualitative (e.g. open-ended interviews, focus groups, content analysis, community based participatory research) data. Instruction in data collection, thematic coding, interpretation and presentation of results is included. The course considers the complementary means by which qualitative

and quantitative methods may be used towards a single research or evaluation goal. Students will use NVIVO software. **Pre-req: MPHP 657 Public Health Research Methods**

MPHP 690 Advanced Quantitative Methods

Periods offered: Spring

Description: **This is a concentration course in the Data and Analytics concentration.** This course will apply advanced quantitative approaches commonly used in public health. Course topics will include data acquisition methods, analysis and dissemination of results. Students will conduct appropriate data analyses using publically available data, interpret the results, prepare a research report using a peer-reviewed journal format and give an oral presentation of their research findings. **Pre-reqs: MPHP 601 Principles of Epidemiology, MPHP 602 Principles of Biostatistics, MPHP 657 Public Health Research Methods and MPHP 691 Advanced Analytical Software.**

MPHP 691 Advanced Analytical Software

Periods offered: Spring

Description: **This is a concentration course in the Data and Analytics concentration.** This course will introduce students to syntax-based statistical software programming (such as SAS, R, SPSS, or Stata) and qualitative data analysis software (such as NVivo). Topics will include advanced data management and manipulation techniques related to the customization of both tabular and graphic deliverable output; quantitative data visualization and modeling; and the coding, analysis, and visualization of qualitative data using analytic software. **Pre-reqs: MPHP 601 Principles of Epidemiology, MPHP 602 Principles of Biostatistics, and MPHP 657 Public Health Research Methods.**

MPHP 697: MPH Independent Study

Periods offered: All

Description: **This is an elective course in the Master of Public Health Program Curriculum.** This elective is intended to offer students an opportunity to gain research or experiential learning outside the classroom in an area of interest where no formal course work is available or in an area where they have already completed one or more formal courses. There is no set curriculum; however, each student elective must be approved by the student's advisor and the Chair of the Upstate MPH Curriculum Committee prior to enrollment. Students must submit a proposal for their planned project/research project outlining site of planned project, supervisor, subject matter to be studied, possible product to be produced (paper, presentation, pamphlet, etc.) and timeline for completion. **Pre-reqs: MPHP 601 Principles of Epidemiology, MPHP 602 Principles of Biostatistics.**

MPHP 698: Applied Practice Experience

Period offered: All

Description: The Applied Practice Experience is a **200-hour practicum** that immerses the student in one or more aspects of public health operations under the guidance of a field supervisor at a public health agency. This practicum provides the MPH student an opportunity to bridge professional academic preparation and public health practice through a supervised field experience. Knowledge and skills acquired in the eight foundational public health courses and the elective courses are applied in an agency setting. This component of the MPH degree program plays a vital role in training students to assume public health leadership positions. Students are required to complete three credit hours; however, credits may be spread across multiple semesters.

Pre-reqs/Co-reqs: MPHP 601 Principles of Epidemiology, MPHP 602 Principles of Biostatistics, MPHP 603 Principles of Environmental Health, MPHP 604 Social and Behavioral Dimensions of Health, MPHP 607 Public Health Administration, and MPHP 660 Program Planning and Evaluation.

MPHP 699: Culminating Experience

Period offered: All (for students admitted prior to fall 2017)

Description: The culminating experience is designed to synthesize and integrate all of the public health theory, knowledge, and skills gained throughout the Upstate Public Health Program curriculum, this requirement allows the student to demonstrate proficiency in mastering the required health competencies in a final project. The student is expected to conduct a Capstone Project, produce a high-quality written product, and an oral presentation. **Pre-reqs/Co-reqs: MPHP 601 Principles of Epidemiology; MPHP 602 Principles of Biostatistics; MPHP 603 Principles of Environmental Health; MPHP 604 Social and Behavioral Dimensions of Health; MPHP 606 Public Health Policy; MPHP 607 Public Health Administration; MPHP 657 Public Health Research Methods; and MPHP 660 Program Planning and Evaluation.**

Additional elective courses are offered through Syracuse University at a higher tuition rate. Please contact the Upstate Public Health Program (publichealth@upstate.edu) for more information.