

Public Health

Master of Public Health (<http://und-public.courseleaf.com/graduateacademicinformation/departmentalcoursesprograms/publichealth/ph-mph>)

Accelerated Bachelor in Public Health Education/Master of Public Health (<http://und-public.courseleaf.com/graduateacademicinformation/departmentalcoursesprograms/publichealth/accel>)

Certificate in Public Health (<http://und-public.courseleaf.com/graduateacademicinformation/departmentalcoursesprograms/publichealth/ph-grad-cert>)

Courses

MPH 504. Planning and Management to Promote Health. 3 Credits.

This course introduces students to the field of public health and develops their appreciation of the unique and important role of public health in promoting health and preventing disease and disability in communities and populations; their understanding of the principles of population health; and their knowledge of how public health functions today, including its organization, financing, policy priorities, and core functions in the United States and other countries. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 505. Public Health Data Management in SAS. 1 Credit.

This course introduces students to the basics of data management using the statistical software SAS. The course emphasizes management and manipulation of large data sets using the active learning approach. Students need to bring their laptop computers to class, as well as a flash drive on which to store SAS programs and data sets. Data for exemplification will be chosen from the large array of online and publicly available health-related data sets. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 506. Public Health Data Management in R. 1 Credit.

This course introduces students to the basics of data management using the statistical software R. The course emphasizes management and manipulation of large data sets using the active learning approach. Students need to bring their laptop computers to class, as well as a flash drive on which to store R programs and data sets. Data for exemplification will be chosen from the large array of online and publicly available health-related data sets. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 510. Public Health & Health Care Systems. 2 Credits.

This course provides an overview of the U.S. public health and health care systems as well as current health policy issues. Topics are addressed from a comparative effectiveness perspective and evaluate how U.S. health systems perform relative to other countries and systems. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 520. Environmental Health. 2 Credits.

This course introduces the key concepts, principles, and applications of the primary science disciplines that underpin environmental health. It provides an overview of the major pollutants including their detection, impact on health, and principles of remediation. Ethical issues related to environmental health are discussed. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 531. Biostatistics 1. 3 Credits.

This MPH Core course introduces the selection, use, and interpretation of basic statistical tests and concepts that may be used in addressing, analyzing, and solving problems in public health and health care research. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 532. Biostatistics 2. 3 Credits.

This course continues the introduction to biostatistics begun in MPH 531 on the selection, use, and interpretation of basic statistical tests and concepts that may be used in addressing, analyzing, and solving problems in public health and health care research. Topics include multiple linear regression, analysis of variance as a special case of multiple linear regression, and an introduction to logistic regression. Prerequisite: MPH 531. F,S,SS.

MPH 533. Advanced Biostatistics. 3 Credits.

This course develops advanced skills in biostatistics, with an emphasis on applied research in public health and medicine. Students learn how to derive quantitative answers to an applied research question by using multivariate statistical modeling. The course covers advanced topics in analysis of variance, linear and logistic regression, survival analysis, and generalized linear models. Prerequisites: MPH 532 and MPH 550. F,S,SS.

MPH 534. Bioinformatics. 3 Credits.

This course introduces bioinformatics techniques and tools in analysis of various types of high-throughput biomedical data, such as microarray, genotyping and next-generation sequencing data. Students will learn the essential principles of conducting genomics research, and will gain hands-on experience of bioinformatics research using real research data. The advanced bioinformatics methods, such as data mining, graph theory, and high performance computing, are discussed. Prerequisite: Permission of Instructor. On demand.

MPH 535. Health Care Data Mining. 3 Credits.

This course covers data mining concepts and methods that are important for health informatics. Basic topics in clustering and classification, such as hierarchical clustering, logistic discrimination, decision tree, variable selection, Bayesian decision model, and others are introduced. Students learn the techniques of data mining from an applications perspective. Students will have access to large healthcare datasets in a local server computer and have hands-on experience using data mining software. Prerequisite: Permission of Instructor. On demand.

MPH 538. Introduction to Structural Equation Analysis. 3 Credits.

This course provides (a) introductory coverage of confirmatory latent variable techniques, including confirmatory factor analysis and structural equation methods; (b) in-depth presentation of special issues related to the application of these techniques in social science-based research; and (c) a comparison of these techniques with traditional analytical approaches. Prerequisite: Graduate statistics course with knowledge of linear multiple regression. On demand.

MPH 541. Public Health Communication. 2 Credits.

This is a two credit hour course designed to provide students with a critical understanding of the effects of the media-mass, social, and participatory-in promoting and impeding the achievement of public health goals. This course introduces social and behavioral sciences theories, methods that are applied to public health problems, and how public health principles are communicated. Students will develop the skills necessary to use media strategically to advance public health policies and social change. The course covers the design, implementation and evaluation of media campaigns to promote public health goals, examines theories and research on media influences with respect to its potential harmful effects on wellbeing, and students design a health communication campaign. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 544. Leadership of Health Care Organizations. 3 Credits.

Leaders of health care organizations can promote or inhibit optimum performance and desirable change. Students learn how to analyze and assess leadership qualities through application of leadership theories, methods, and techniques. Topics include leadership versus management, leading organizational change, dealing with workforce and organizational challenges, and related subjects. Prerequisite: MPH major or instructor consent. On demand.

MPH 545. Public Health Leadership & Interprofessional Practice. 3 Credits.

This is a three credit hour course designed to introduce students to major theories and concepts of leadership, ways of applying these to public health issues requiring leadership, and provides an opportunity for students to develop skills and resources for further developing leadership skills. The course focuses on preparing healthcare professionals with the foundational skills needed to work in teams to effectively collaborate and coordinate services in population health management. Key themes focused on interprofessional communication, collaboration, leadership, and professionalism will be ingrained throughout content. Prerequisite: Admission into MPH Program or prior approval from instructor. On demand.

MPH 550. Population Health Research Methods. 3 Credits.

This course provides an overview of the research process including formulation of a research problem, selection of a research design, construction of an instrument for data collection, selection of a sample, collection and processing of data, and writing a research report. Topics include how to identify a research question; reasons and procedures for reviewing the literature; observational and interventional research designs; and commonly used measures in public health-related research. Prerequisites: MPH 531. On demand.

MPH 551. Epidemiology. 3 Credits.

This course introduces the basic epidemiologic concepts used to study health and disease in populations including measurement, study design, and related statistical tests. Observational and experimental epidemiologic studies are described and their advantages and disadvantages compared. The course provides an overview of the major causes of morbidity and mortality in populations. Ethical issues related to epidemiology are discussed. Prerequisite: Enrollment in MPH degree program or certificate. On demand.

MPH 552. Epidemiology 2. 3 Credits.

This is a three credit hour course designed to provide students with a critical understanding of intermediate epidemiological principles. This second course of epidemiology is a continuation of the MPH 551 Epidemiology course which introduced basic epidemiology concepts to the students. MPH 552 (Epidemiology 2) covers methods and techniques for designing, implementing, analyzing and interpreting observational studies, including cross-sectional, case-control and cohort studies. Prerequisites: MPH 531 and MPH 551. On demand.

MPH 553. Population Health Outcomes Research. 3 Credits.

This course is designed to give students hands-on-experience analyzing existing health data - administrative claims, electronic medical records, and patient surveys - to evaluate health outcomes. Students develop analytic expertise and gain practical experience creating common outcome measures including utilization of health services such as office visits, visits to primary care providers, hospitalizations, and emergency room visits and their associated costs. Other outcome measures include general health and functional status, behavioral health problems such as depression, and quality of life. Common methodological issues associated with analyzing these data such as matching, risk adjustment, and selection bias are discussed. Prerequisite: Completion of MPH core courses or consent of instructor. On demand.

MPH 554. Continuous Quality Improvement for Health Care Organizations. 3 Credits.

This course provides a detailed view of quality improvement techniques, methods, and evaluation in health care organizations. The knowledge gained from these quality improvement methods enable students to identify, address, analyze, and solve organizational quality shortcomings with the ultimate goal of improving healthcare quality. Topics include quality assessment, quality assurance, total quality management, continuous quality improvement, health care reform related to quality improvement, patient safety, and quality health outcomes. Prerequisites: MPH 510 and MPH major or instructor consent. On demand.

MPH 555. Health Law & Policy Analysis. 3 Credits.

The U.S. health system is undergoing significant transformation, and public health has a critical role at the federal, regional, state, and local levels. Students will learn advanced skills in applied health policy including: evaluating proposed legislation and reform; researching health legislation (e.g., Public Health Service Act, Social Security Act, Affordable Care Act); understanding the rulemaking process at state and federal agency levels once laws are enacted; conducting literature reviews; analyzing the evidence base for public health policy interventions; writing brief summaries of proposed legislation; giving testimony to inform health policy decisions; summarizing the pros and cons of health policy interventions; and identifying potential opponents, proponents, advocates, and stakeholders related to specific health law policy issues and interventions. Prerequisite: POLS 552. On demand.

MPH 556. System Dynamics 1. 3 Credits.

This course provides an introduction to the System Dynamics field of study which is a computer-aided approach to improving system performance through policy analysis and design. The knowledge and critical thinking skills gained from this course will enable students to work either independently or on interdisciplinary teams to effectively deal with problems arising from dynamically complex systems. Topics include: perspective and process; tools for systems thinking; the dynamics of growth; tools for modeling dynamic systems; instability and oscillation; model testing; and challenges for the future. This course is open to UND graduate students in all disciplines. On demand.

MPH 558. System Dynamics 2. 3 Credits.

This course builds on MPH 556: System Dynamics I. This course will enable students to effectively plan and manage System Dynamics projects by providing knowledge and skill relating to advanced modeling techniques, software capabilities, and client engagement processes. Topics include: model building, documentation and presentation best practices; use of historical data; model calibration and testing techniques; advanced software features; group model building; and implementation challenges. This course is open to UND graduate students in all disciplines. Prerequisite: MPH 556. On demand.

MPH 570. Special Topics in Population Health. 1-3 Credits.

This course explores special topics in the field of population health. Topics vary with faculty expertise and issues current in the field. The course may be repeated for credit if the topics are different. Prerequisite: Approval of Faculty Advisor. Repeatable to 6 credits. F,S,SS.

MPH 572. Health Care Budgeting and Finance. 3 Credits.

This course focuses on learning and applying financial and managerial accounting principles and techniques to health services organizations. The subject matter is designed to provide a working knowledge of accounting, finance, and budget terminology. Components of the class include the evolution of healthcare finance and reimbursement, revenue and expense classifications, financial reporting, budgeting, financial analysis, financing of public health agencies, and the current and anticipated financial impact of healthcare reform on the healthcare industry and health services organizations. Prerequisite: MPH major or instructor consent. On demand.

MPH 574. Foundations of Health Economics. 3 Credits.

This course serves as an introduction to the role of economics in health care and health policy. The microeconomic principles of supply and demand are introduced, and topics such as the demand for health, the derived demand for medical care, and the demand for health insurance are covered. On the supply side, the course examines the supply of medical care by physicians and hospitals, medical technology, and the role of managed care organizations. Implications of adverse selection, moral hazard, externalities, and asymmetric information are addressed. Cost benefit and cost effectiveness analyses are also introduced. The course examines the role of government in health care and health care reform including the implications of expanding insurance coverage under the Affordable Care Act. The effectiveness and efficiency of various health policies are also addressed, including government forms of insurance coverage such as Medicare, Medicaid, and the Department of Veterans' Affairs, price regulation of hospitals, provider payment reform, medical malpractice, uncompensated care, and health care workforce issues. Prerequisite: College Algebra and one of the following: Basic Statistics or Biostatistics, Introductory Micro- or Macro- Economics; or Consent of Instructor. On demand.

MPH 581. Principles of Indigenous Health. 3 Credits.

This is a three credit hour course designed to provide students with a critical understanding of determinants of Indigenous health and health disparities. In this course we will define Indigenous populations, histories, cultures, societies, traditional healing systems, food sources, patterns and impact of colonization, and health disparities. We will address historical and ongoing traumas associated with colonization and colonialism, understanding Indigenous concepts of health and healing, and ways of moving toward health equity. Populations we will assess include American Indian/Alaska Native, First Nations, Inuit, Sami, Aboriginal Australian, Maori, Ainu, and Pacific Islanders. Prerequisite: Admission into MPH Program or permission from the instructor. On demand.

MPH 582. Social & Ecological Determinants of Indigenous Health. 3 Credits.

This is a three credit hour course designed to provide students with the skillsets to apply the Social-Ecological Model to Indigenous Health through an Indigenous lens. Key concepts and determinants of health will include: Social determinants of Indigenous Health, Indigenous environmental health and environmental justice, Impact of discrimination and marginalization of Indigenous populations, Social and Ecological case studies. Prerequisite: Admission into MPH Program or prior approval of instructor. On demand.

MPH 583. American Indian Health Policy. 3 Credits.

The American Indian (AI) population is unique in the United States in that AIs are born with a legal right to health services. This is based on treaties and numerous other laws, executive orders, court decisions and other legal bases in which the tribes exchanged land and other natural resources for various social services, including housing, education, and healthcare. The Indian Health Service (IHS) is the federal agency responsible for carrying out the federal government's trust responsibility to provide public health and healthcare services to AIs. Prerequisite: Admission into MPH Program or prior approval from instructor. On demand.

MPH 584. Public Health Programming in Indigenous Populations. 3 Credits.

This is a three credit hour course designed to provide students with the knowledge and strategies needed to develop and implement effective public health programs in Indigenous populations to address significant public health disparities. Key areas of focus include: Applying the Ten Essential Public Health Services in Indigenous Populations, Indigenous Research Program Evaluation Frameworks, Grant writing and management, Funding sources for Indigenous Public Health programming, Case Studies/Best and Promising Practices in Indigenous Public Health. Prerequisite: Admission into MPH Program or prior approval from instructor. On demand.

MPH 590. MPH Seminar in Leadership and Advocacy. 1 Credit.

The MPH Seminar is one component of the MPH Culminating Experience, and enrollment is concurrent with MPH 995. Presentations, discussions, and activities focus on developing knowledge and skills that prepare students to be effective public health leaders and advocates. Prerequisite: Complete all MPH core courses. Corequisite: MPH 995. On demand.

MPH 594. Practicum. 1-3 Credits.

The Practicum is a planned, supervised, and evaluated practice experience. It provides an opportunity to apply basic public health competencies acquired through coursework. The Practicum is a group experience designed to meet MPH curricular goals and the needs of participating Practicum organizations. Prerequisites: Enrollment in MPH degree program, completion of core courses and consent of instructor. Repeatable to 3 credits. On demand.

MPH 596. Public Health Internship. 6-24 Credits.

The internship is a professional experience in an approved public health-related agency or organization. An internship is optional for MPH students, and can be paid or unpaid. It does not replace the 42-credit required coursework for the MPH degree but is an additional training experience, which would be undertaken when most or all MPH coursework is complete. Prerequisite: Approval of MPH program director. Repeatable to 24 credits. S/U grading. On demand.

MPH 995. Integrative Learning Experience. 2 Credits.

The Scholarly Project is one component of the MPH Culminating Experience, and enrollment is concurrent with MPH 590. Students complete a project that demonstrates synthesis and application of knowledge acquired through coursework and other public health learning experiences. Prerequisite: Complete all MPH core courses or instructor permission. Corequisite: MPH 590. F,S,SS.

MPH 996. Continuing Enrollment. 1-12 Credits.

Repeatable. S/U grading.