

**MASTER OF PUBLIC HEALTH  
IN ENVIRONMENTAL & OCCUPATIONAL HEALTH**

***INTRODUCTION***

The Department of Environmental & Occupational Health (Faculty of Public Health) offers a MPH program in “Environmental & Occupational Health”. Only full-time students are admitted to the program. The objective of the program is to be a leading program in the Gulf region, recognized for its effect on safeguarding and improving Kuwait’s environment, occupational health, worker safety and well-being of Kuwait’s population; achieving this by providing a professional degree, the graduates from which will possess the environmental health and occupational health knowledge, attitudes and skills that can effectively address the environmental and occupational health and safety challenges facing Kuwait.

*According to the University Council decision dated 4/2/2007, Thesis students admitted with effect from September 2007 are exempted from the comprehensive examination.*

***PROGRAM REQUIREMENTS***(Non-thesis option in parenthesis)

**45(45) TOTAL CREDITS**

**18(21) COMPULSORY** (Credits in parenthesis)

0565-540	Epidemiology I	(3)
0565-550	Biostatistics I	(3)
1900-501	Public Health Biology (for non-Health Professionals only)*	(2)
1910-501	Introduction to Public Health Practice and Ethics	(3)
1920-501	Principles of Health Policy and Management	(3)
1940-501	Social and Behavioral Foundations of Public Health	(3)
1950-501	Introduction to Environmental and Occupational Health	(3)
1950-593	Capstone Project (project option)	(3)

\*This course is required from non-Health Professionals only. It substitutes two credits elective course.

**9(9) CONCENTRATION COURSES** (Credits in parenthesis)

1950-502	Environmental and Occupational Health Risk Assessment	(3)
1950-503	Environmental Health Management	(3)
1950-504	Worker’s Health and Safety	(3)

**5(5) APPLIED COMPULSORY COURSES** (credits in parenthesis)

1900-591	Research Project Design	(1)
1910-581	Public Health Practicum	(4)

**4(10) ELECTIVE COURSES** (credits in parenthesis)

1910-530	Issues in Global Health	(3)
1910-531	Case Studies in Public Health Communication	(3)
1920-502	Health Economics and Financing	(3)
1920-503	Human Resource Management in Healthcare	(3)
1920-504	Health Planning and Evaluation	(3)
1920-530	Advanced Health Economic Evaluation	(2)
1920-531	Casemix System for Quality and Efficiency	(3)
1920-532	Managing Quality Assurance in Health Care	(2)
1920-533	Seminar in Health Policy and Management	(2)
1930-530	Qualitative Research	(2)
1930-531	Data Management and Informatics	(3)
1940-530	Mental Health Promotion	(2)
1940-531	Understanding Stress and Health	(2)
1950-530	Health Impacts of Land Soil Water and Air Pollution	(3)
1950-531	Injury Epidemiology and Prevention	(3)
1950-532	Exposure Assessment for Environmental & Occupational Epidemiology	(3)
1950-533	Public Health Aspects of Foodborne Diseases	(3)
1950-534	Environmental and Health Impact Assessment	(3)

**9 COMPULSORY**

1950-597	Thesis	(0)
1950-598	Thesis	(0)
2000-599	Thesis	(9)

***COURSE DESCRIPTION***

**1900-501: PUBLIC HEALTH BIOLOGY**  
**CR: 2**

This course, designed for MPH students without a background in a health profession, will examine the concept of 'health' and how it is defined and operationalized in the public health context, and will provide students with the necessary foundations to understand the biological basis of disease. The key issues to be examined are: What is a 'disease'? What is health and is it more than 'absence of disease'? Using a biological systems approach, the course will integrate biological concepts as they relate to public health. There is an emphasis on protecting physical and mental

function and health, especially at the interface with the environment, as well as understanding the vulnerabilities and susceptibilities that can disrupt it.

**1900-591: RESEARCH PROJECT DESIGN**  
**CR:1 PR: 0565-540, 0565-550**

In this research project design course the student begins the process of identifying a public health question and development of all aspects of a research project protocol, under the supervision of faculty. By the end of this course, the student will produce a research proposal to be approved by the MPH program committee, the FOPH ethics committee, and the MOH ethics committee (as

appropriate). The initial draft of the data collection instrument will be included in an appendix of the research proposal. Regardless of the format, all students are required to take the online course in Protection of Human Subjects in research, designed by US National Institutes of Health Office of Extramural research and required of all NIH grant recipients.

**1910-501: INTRODUCTION TO PUBLIC HEALTH PRACTICE AND ETHICS**  
**CR: 3**

This module introduces the Master students to the field of public health practice. It provides the core concepts required of a Public Health practitioner to be able to identify issues of importance to Public Health, assess the population needs for health, plan interventions, execute the interventions, and assess the impact of the programmes. The course will focus on aspects of communication as it relates to public health practice. Issues relating to ethics in public health practice, global health, and the landmark historical achievements in public health practice will also be covered. The course will provide the conceptual framework for the incorporation and integration of the skills and knowledge presented in later modules.

**1910-530: ISSUES IN GLOBAL HEALTH**  
**CR:3 PR:1920-501**

Global Health has emerged over the last 40 years as a complex configuration of governmental, non-governmental, national, international, industrial, commercial, and philanthropic institutions involved in projects with an estimated value of \$16 billion. This course will introduce the student to the organisational and ethical issues involved in this movement. These include the current structures involved, how they are funded and the ethical issues raised by this development.

**1910-531: CASE STUDIES IN PUBLIC HEALTH COMMUNICATION**  
**CR:3 PR:1920-501**

This course will extend the skills required to develop important public health communication materials, campaigns, and strategies related to a variety of topics and for diverse target populations. It will use a case-study approach for the students to critically evaluate previous interventions and create alternative visions of how they could be conducted. They will use the principles that they have learned from previous modules.

**1910-581: PUBLIC HEALTH PRACTICUM**  
**CR: 4**

This course is a preceptor-guided experience in a public health organization, providing an opportunity for MPH students to bridge the gap between theory and practice. The main purpose of this practical experience is to allow the student to apply knowledge and theory to a particular area of public health practice and demonstrate capabilities to enter the profession. The Practicum consists of a minimum of 180 hours of experience in an approved public health setting, under the guidance of a qualified preceptor. The student, Program Director, and preceptor will sign an agreement that will guide the practicum experience. The student will prepare a comprehensive portfolio to describe all activities. This portfolio will include a listing of the competencies that have been demonstrated and a paragraph describing how the practicum work supports this.

**1920-501: PRINCIPLES OF HEALTH POLICY AND MANAGEMENT**  
**CR: 3**

This course introduces the basic managerial concepts as they apply to healthcare organizations, with a focus on health care structures, policy development, the roles of the healthcare manager within a health system and the main function of management. The course will provide the insight on concepts of healthcare systems the healthcare workforce, quality assurance, cost considerations, human resource management, health care administration systems, and related ethical issues. The course will also cover the basic concept of health policy, the process of policy formulation and determining forces behind policy decisions, as well as health policy as a form of Health Promotion. The roles of state, political system and other public and private sector key players development of health policy will be covered in this course.

**1920-502: HEALTH ECONOMICS AND FINANCING**  
**CR:3 PR:1920-501**

This course is an introduction to health economics and a description of the current financial environment in which healthcare organizations function. Basic economic concepts of demand and supply and their applications in financial assessment of health organizations for critical and sound financial decisions will be covered. The course will provide the skills on economic

evaluation methods in assessing new and existing technology covering both cost-effectiveness and cost-benefit analysis. The course will cover the application of financial management principles to health care organizations for effective and efficient health care administration; the health financing aspect of healthcare services; the role of public, non-profit, and private sector roles in funding; and different methods provider's payment and allocating health services.

**1920-503: HUMAN RESOURCE MANAGEMENT IN HEALTHCARE**  
**CR: 3 PR:1920-501**

This course will provide the foundations for all aspects of human resource management, planning and development that are crucial for effective and efficient functioning of health organizations. The challenges facing health organizations to manage human resources for delivery of high quality services to users will be explored in this course. It covers theories and practices in defining, evaluating and controlling behavior and atmosphere in a health service organization. Emphasis will be given to leadership aspects, motivation, communication and group dynamics in a health organization. The course will also discuss the relationship of healthcare organization with the employee, which includes job analysis, forecasting of human resource needs, and training and development of the health workforce. The key issues in health human resources will be further studied through reviews of published journal articles, case studies and student presentations.

**1920-504: HEALTH PLANNING AND EVALUATION**  
**CR: 3 PR:1920-501**

This course will help to develop knowledge and skills to undertake a systematic approach in the cycle of planning, implementation, monitoring and evaluation of health programmes covering promotive, preventive and curative services in health care. Both the conceptual model of programme planning as well as the pragmatic approach in undertaking the planning process will be covered in this course. The roles of the health management information system and different sources of data for health planning and evaluation will be discussed in this course, as will be the use of routinely collected morbidity and mortality data for structural, process and outcome evaluation.

Both qualitative and quantitative techniques in program evaluation will be covered in this course.

**1920-530: ADVANCED HEALTH ECONOMIC EVALUATION**  
**CR:2 PR:1920-501, 1920-502**

This course will provide the students with an understanding of the concepts, application and advanced analytical methods in conducting health economic evaluation. Students will develop hands-on skills to conduct economic evaluations with practical experiences in working on real health economic data. The specific areas covered in this course include economic modeling, costing analysis, budget impact analysis, cost-effectiveness analysis and cost-benefit analysis. Methods of conducting simple and complex sensitivity analysis, interpreting and presenting results of economic evaluations will be covered.

**1920-531: CASEMIX SYSTEM FOR QUALITY AND EFFICIENCY**  
**CR:3 PR:1920-501, 1920-502**

This course is designed to introduce the concept of casemix system and its application in enhancement in quality and efficiency of healthcare services. The course will provide an overview of casemix system, its evolution from the first version introduced in 1980's to the present day where the system has been implemented in more than one hundred countries worldwide. The minimum data set for casemix systems will be discussed in detail including requirements for diagnoses and procedures coding using the ICD classification system. Benefits of using Casemix System as a tool to support quality assurance programme will be discussed, as will the advantages of using it for prospective provider payment mechanisms. Students will perform hands-on exercises using the Grouper software programs available to support implementation of casemix systems worldwide. A pragmatic approach to planning for implementation of casemix system at hospitals, organizations and national level programs will be presented in this course.

**1920-532: MANAGING QUALITY ASSURANCE IN HEALTH CARE**  
**CR:2 PR: 1920-501**

Improvement in quality of health care services is one of the expected roles of healthcare managers. In this course the technical aspect of designing and implementing effective and efficient strategies for

monitoring quality and correcting deficiencies in health delivery systems will be covered. Methods to ensure optimal delivery of quality services through comprehensive use of human and financial resources will be discussed. Students attending this course will have the understanding the overall concept of quality assurance in health care services including various dimensions of quality, quality assurance process and development of indicators to measure and monitor quality of care in healthcare organization. Topics covered include risk management, total quality management and the methods to ensure patient safety. Aspects of planning, implementing and evaluation of quality assurance programme will be covered in detail in this course.

**1920-533: SEMINAR IN HEALTH POLICY AND MANAGEMENT**

**CR:2 PR: 1920-501**

Health policy and management issues evolve depending on the current challenges and changes in the health system. The main emphasis of this course is to expose MPH students to the debates regarding the contemporary issues which affect local and international health systems. In this self-learning course, the students are required to prepare a seminar that will be presented at the end of the course. Students will be required to work in a group to select a topic of their interest, search for information from local and international literatures on the proposed topic for the content of the seminar. Following the Seminar, the students are required to submit a written report taking into accounts comments and feedback given by academic staff.

**1930-530: QUALITATIVE RESEARCH**

**CR:2 PR: 0565-540**

This course will examine the basic and advanced concepts and methods of qualitative research methods and their relationship with quantitative research methods. On completion of the course, the student will be able to conduct qualitative research using the methods and forms of analysis which are relevant to public health research. They will be able to plan and undertake collection and analyses of qualitative data. Examples and application of course content to the Kuwaiti context will be emphasized. Practical exercises in qualitative research will be included.

**1930-531 : DATA MANAGEMENT AND INFORMATICS**

**CR: 3 PR:0565-550**

This course covers basic and advanced concepts of data and information management. Students will be introduced to the dynamic field of public health informatics, the expected competencies of a public health informatics specialist, and the practical application of data management and informatics concepts in the field of public health. Students will also be introduced to the field of data mining and its application to a variety of types of healthcare data. Examples and application of course content to the Kuwaiti context will be emphasized. Practical exercises in data management and informatics will be included. Students will be required to use an anonymized dataset extracted from a health institution to identify problems, consistency issues, and data merging issues.

**1940-501 : SOCIAL AND BEHAVIORAL FOUNDATIONS OF PUBLIC HEALTH**

**CR: 3**

This module introduces MPH students to the social and behavioral factors related to human health and disease (social determinants of health) across the life course. The course covers community and individual aspects of health promotion, the principles of social epidemiology, demography and ethical issues related to the social and behavioral aspects of the human experience. It provides an introduction to the theories of behavioral and social sciences, health and illness behaviors, models of behavior change, and the social reactions to and implications of "disease." It covers health disparities, psychosocial stress, and public health issues related to different age groups. The course will enable the students to participate in health promotion planning, especially at the community level. Finally, this course focuses on mental health, prevention of non-intentional injuries, and how to deal with violence from a public health perspective.

**1940-530: MENTAL HEALTH PROMOTION**

**CR:2 PR:1940-501**

This course will focus on the principles of mental health, its indicators and social determinants. It will cover the prevalence of common mental health problems across life span, and in different communities. The course will emphasize on the relationships between mental and physical health and illness, and why mental health promotion and prevention is considered as a public health priority.

An account about strategies of mental health promotion, the evidence of effective interventions, and the development of sustainable programs in mental health promotion will be covered also. The course will discuss mental health from human rights perspective.

**1940-531: UNDERSTANDING STRESS AND HEALTH  
CR:2 PR:1940-501**

This course introduces Master students to stress, including its causes, the body's reactions to excessive stress, and symptoms and signs that develop following stress. The course focuses on the effects of stress on productivity, quality of life, social relationships in different situations (family, occupation, education, etc.), and health. Students will gain a perspective on the consequences of stress on cognitive, emotional and behavioral aspects of life. The course also presents different strategies of stress management and relief and how these interventions improve overall human's efficiency and quality of life.

**1950-501: INTRODUCTION TO ENVIRONMENTAL AND OCCUPATIONAL HEALTH  
CR: 3**

This course introduces students to the fundamental concepts of Environment and Occupational Health. It differs from the study of how humans affect the environment, because this course focuses on people's health. Human health depends on the surrounding environment. The course integrates basic public health concepts as they relate to disease causation and prevention including environmental and occupational health effects, water supply, water pollution control, solid waste management (hazardous wastes), air pollution control, general environmental regulations, and related ethical issues. Hazards that lead to carcinogenesis are stressed. Population and occupational health, emerging diseases and the implications of population growth are discussed. Available techniques of preventive practices, such as controlling the quality of air, water, and consumer products, are described for both the workplace and the general environment. The impact of the workplace environment on the health and well-being of workers will be discussed.

**1950-502: ENVIRONMENTAL&OCCUPATIONAL HEALTH RISK ASSESSMENT  
CR:3 PR:1950-501**

The main goal of this advanced course is to explore the risk(s) to the population of exposures to harmful environmental and occupational agents and conditions; and to present the tools for assessment and management of these risks. This course involves the integration of environmental and occupational health, epidemiology, toxicology, and the chemical and biological disciplines to understand the health risks for a given level of exposure to hazardous agents. The course will present the techniques and models for estimating the risks of physical, biological, and chemical agents that can have an impact on human health and well-being, as well as lifestyle and other factors which can modify these effects. Application of these concepts to government, industry and the population will also be covered. The course also covers critical risk calculation and assessment by exploration of underlying assumptions, use of exposure assessment models, and ascertainment of uncertainties. The relationship between risk assessment, characterization and management; and implications on public health policy are also discussed.

**1950-503: ENVIRONMENTAL HEALTH MANAGEMENT  
CR: 3 PR: 1950-501**

The course explores the impact of human activities on the environment and the strategies that are used by international organizations, national and local governments in response. The course will explore the roles of the World Health Organization, United Nations Environmental Protection Agency, and the International Organization for Standardization and governments in setting regulatory frameworks, and the responsibilities of individual agencies/organizations to comply with regulations. The environmental issues surrounding climate change will be addressed. Strong emphasis is placed on the legal, political, and economic structures and systems that are used by governmental and individual organizations to combat and reduce a wide range of environmental problems. The course covers the management of environmental health aspects including quality of life, physical, chemical, biological, social and psycho-social factors in the environment. Also covered are the assessment, correction, control, and

prevention of factors in the environment that can adversely affect health.

**1950-504: WORKER'S HEALTH & SAFETY  
CR: 3 PR:1950-501**

This course covers occupational hazards, injuries, and diseases; and the principles of occupational safety and health (OSH). Covered topics include safety regulations and standards; models of injury and occupational disease causation; accident investigation procedures; and strategies for control of occupational injuries and diseases. The course explores the protection of workers against work-related diseases and injury, the conventions of the UN International Labor Organization, and the need to achieve sustained decent working conditions and a strong preventive safety culture in the workplace. The course also covers the principles of safety engineering, industrial hygiene, industrial ergonomics, and some aspects of occupational medicine.

**1950-530: HEALTH IMPACTS OF LAND SOIL  
WATER AND AIR POLLUTION  
CR:3 PR:1950-501**

The course covers the health impacts of air, water and land/soil pollution which is the addition to the ecosystem of something that has a detrimental effect on it. The course will cover the important causes of air, water, and land pollution, including the high rate of energy usage by modern growing populations, and the impact pollution has on human health and public health. Sources of pollution, including industry, business, road transport, incinerators, waste disposals, agriculture and households, will be covered. The course will also cover main pollutants in the environment, such as particulate matter, PAHs, lead, ground-level ozone, heavy metals, sulphur dioxide, benzene, carbon monoxide and nitrogen dioxides. The course will discuss the range of illnesses caused by pollution (e.g., lung cancer, cardiovascular and respiratory diseases, chronic bronchitis, acute respiratory illness, and impairment of lung function).

**1950-531: INJURY EPIDEMIOLOGY AND  
PREVENTION  
CR:3 PR:1950-501, 0565-540**

This course provides instruction on a diverse array of topics specific to injuries (both unintentional and intentional) which are clearly a major threat to the public's health and well-being. The Epidemiology of Injuries will be covered, including international

and local trends, along with the Haddon Matrix and various common types of unintentional and intentional injury. The public health importance of injuries in Kuwait will be emphasized, as a leading cause of death, particularly among the young population. The role of regulation and law in the work and living spaces and environment will be covered; in addition to common risk-taking behaviors and the means for change in such behaviors using strategies such as the European Union "Zero-Accident-Vision." The course will cover the important role of health promotion in terms of the individual, the community, society, and regulatory agencies in the prevention of injuries.

**1950-532: EXPOSURE ASSESSMENT FOR  
ENVIRONMENTAL &  
OCCUPATIONAL EPIDEMIOLOGY  
CR:3 PR:0565-540, 0565-550, 1950-501**

The overall goal of this course is to familiarize students with general concepts in assessing human exposures to environmental & occupational contaminants. The course will provide information on different sources and routes of exposures, the various methods applied to assess these exposures and the challenges faced by population-based studies that relate such exposures to health outcomes. A variety of methods of exposure assessment will be discussed, including environmental measurements, personal exposure assessment, questionnaires, and job exposure matrices. Statistical analysis and modeling of exposure assessment data including Job Exposure Matrices (JEM), Geographical Information Systems (GIS), and Source Dispersion and Micro-environment models will be introduced.

**1950-533: PUBLIC HEALTH ASPECTS OF  
FOODBORNE DISEASES  
CR:3 PR:0565-540, 1950-501**

The focus of this course is the surveillance of foodborne diseases designed for public health practitioners and other students interested in the safety of food. It describes how information from surveillance is used to improve public health policy and practice in ways that contribute to the safety of food. Emphasis is on the microorganisms and chemical agents responsible for foodborne diseases, analyzing their cause, the pathogenesis, clinical manifestations, reservoirs, modes of transmission, and epidemiology. The course will

also address the transport, survival, and fate of pathogens in the environment, the concept of indicator organisms as surrogates for pathogens, and the removal and inactivation of pathogens and indicators by water and wastewater treatment processes that are closely associated with foodborne diseases. It will also examine the public health impact of quality assurance programs, such as Hazard Analysis and Critical Control Points, and regulatory agencies to control foodborne diseases.

**1950-534: ENVIRONMENTAL AND HEALTH IMPACT ASSESSMENT**

**CR:3 PR:1950-501, 1950-532, 1950-530**

This course describes the function of health impact assessment (HIA); its role in identifying activities and policies likely to have major impacts on the health of a population; and its function as a means of evidence based policy making for improvement in health. The course discusses the relevant combination of methods whose aim is to assess the health consequences of policies, projects, or programs in any sector of society or the environment – not just the “health” sector – with an emphasis on “Health in All Policies” (HiAP). Examples of transportation, land use, agriculture, water, energy, and forestry projects will be examined. This course aims at developing skills in reviewing and conducting HIA within the context of fostering an integrated understanding of how public policies and decisions influence the determinants of population health.

**1950-593: CAPSTONE PROJECT**

**CR: 3**

The Capstone Project (non-Thesis option) serves as the culminating experience and the final assessment of the public health competencies required of MPH graduates. The comprehensive paper is a synthesis of the student’s practicum or work experience and knowledge and skills gained through coursework. The Capstone project can take on many different formats, including, but not limited to 1) A standard public health research project in a human population, 2) Health situation analysis of a specific public health problem, 3) A health policy analysis of a public health problem, implications and recommendations, 4) A systematic review and meta-analysis of a public health problem or intervention. The report will include a description of the public health problem they are working on, a literature review including current peer reviewed research, and a description of the products or data that have resulted from their work, and an analysis of the public health significance and recommendations based on the findings. The capstone project should provide evidence that the MPH graduate can prepare a substantial and rigorous contribution to a field of public health.

**1950-597: THESIS**

**CR: 0**

**1950-598: THESIS**

**CR: 0**

**2000-599: THESIS**

**CR: 9**