

Epidemiology Department
Faculty of Public Health and Tropical Medicine
Jazan University, Jazan
Saudi Arabia

Course Descriptions

1) **Introduction to Public Health** **CODE-PHS 211**

The course is designed to introduce the multi-disciplinary nature and core functions of public health field. Public health concepts, disciplines, services, achievements, tools and challenges will be presented so that the student will have sufficient background of public health practice. The Students will have the opportunity to review and apply basic principles of public health through individual and group assignments and selected case – studies based on daily life public health issues and events as reflected in newspaper

2) **Anatomy and physiology for public health** **CODE-PHS 212**

Anatomy and physiology-1 course will cover the essential knowledge in the structure and functions of all human organ systems which will be presented in a practical and comprehensive manner. The course primarily focuses on basic facts in human anatomy and physiology that must be understood by the students in order to pursue their public health career. The learning materials will be easy to follow and ideal for anyone requiring a solid understanding of how the human body works.

3) **Microbiology and Parasitology for Public Health** **CODE-PHS 213**

Microbiology and parasitology course is designed to impart knowledge regarding the structures, morphology and classification of bacteria, viruses, fungi and parasites. The students will be introduced to the pathogenesis of the various infectious agents. The course will also cover some topics related to community health, including the modes and sources of infections as well as prevention of these infections.

4) First Aid and Physical Assessment

CODE-PHS 214

This course teaches students critical skills needed to respond to and manage a first aid or cardiac emergency. Students learn skills such as how to treat bleeding, sprains, broken bones, shock and other first aid emergencies as well as BLS-CPR and AED. The CPR portion of the course teaches how to perform CPR on adults, children, and infants (including rescue breathing with a mask, a bag-mask device, and oxygen); how to use an automated external defibrillator (AED); and how to help someone who is choking. Passing a practical skills and written exam with an 80% or better is required for certification.

This course provides an introduction to health assessment and promotion for adults of all ages. Emphasis is given to the theoretical concepts of physical assessment techniques, interviewing skills, focused body system assessments, genetic and health risk assessments and to the key elements of the physiological, developmental, spiritual, socioeconomic, cultural, and aging dimensions essential for holistic assessment. Students are introduced to evidence-based clinical assessment tools.

5) Medical Terminology

CODE-PHS 215

A course designed to acquaint the student with the specialized language of medicine and to develop communication skills in areas where use of medical terms is necessary and appropriate. This course explores the root words, suffixes and prefixes of the vocabulary used in hospitals and other health settings. Students review the nervous, skeletal, cardiovascular, muscle and other major systems of the human body, and they discuss terms related to physiology, anatomy and pathological conditions. Students learn to spell, define and pronounce common medical terms.

6) Pharmacology for Public Health

CODE-PHS 316

Pharmacology is the study of drugs and their actions on living organisms. A sound knowledge of basic pharmacologic principles is essential for most health care professionals, especially those who interact with patients who receive medications. This course gives a basic overview of pharmacologic principles, drug development, and federal legislation affecting the dispensing and use of drugs.

7) Health Research Methods

CODE-PHS 317

The course describes methods for planning and conducting scientific research. These includes identifying the research problem, formulating the research questions, setting research objectives, specifying the appropriate study design, designing of the study questionnaire, identifying methods of data collection, statistical analysis with interpretation and recommendations.

8) Principles of Epidemiology

CODE-EPI 222

The course is designed to enable students understand and apply basic principles of epidemiology in public health. This would cover definition of epidemiology with describing key features and application of descriptive epidemiology. Distribution of disease and health related events in population with ability to calculate and interpret measures of disease morbidity and mortality, different types of epidemiological studies with Practical examples of all of these studies. This will enable them to understand the causation of disease methods of calculation of strength of association of causation.

9) Public Health Nutrition (Elective)

CODE-EPI 423

Nutrition can be considered to be the foundation of good health and freedom from disease. 'Nutrition science' has been comprehensively defined by Robinson as 'The science of foods, nutrients and other substances therein; their action, interaction and balance in relationship to health and disease; the processes by which the organism ingests, digests, absorbs, transports and utilizes nutrients and disposes off their end products...'. Simply put the word nutrition is used to refer to the processes of the intake, digestion and assimilation of nutrients and the application of this knowledge to preserve health and avert the disease.

Malnutrition still constitutes as a significant health problem worldwide and KSA is not an exception. There is emphasis on supply of safe and complete diet particularly to vulnerable groups in order to prevent occurrence of nutrition related diseases. This course provides a basic knowledge in the field of nutrition which includes the basic component of food i.e. carbohydrate, protein, fat , vitamins, minerals and dietary fibers, their physiology and diseases

which can be ascribed to these nutrient in relation to their deficiency or oversupply in other words malnutrition. Beside this there would be nutritional assessment and basic survey methodology which includes different parameters, criteria, and anthropometry, which are practiced and approved by WHO. The student would be able to know dietary goals set by WHO which would be helpful to do nutritional health planning in future. This course will also encompass the food fortification, food adulteration, food safety and HACCP system. HACCP system will be taught to learn the standardization of food surveillance.

10) Public Health Policy

CODE-EPI 425

The course is designed to make students understand public health policy, public health laws and regulations. It includes health ethics and law including Islamic culture and traditions.

This course deals with how to influence health and social policies within the government. It will cover how to work with various populations and use sociological and cultural skills to understand the needs of a community.

11) Primary Health Care

CODE-EPI 426

The course includes the concepts, principles and strategies of primary health care. The principle which included equitable distribution, community participation, inter-sectoral coordination and appropriate technology, will be studied in detail with suitable example and policies in KSA and around the globe. The course also discusses the basic elements of the primary health care in details, supportive activities to fulfill the aspiration of those elements at local levels and facilities needed to delivery of the primary health care services to the community. Course also includes primary health care structure in K.S.A. including Ministry of health hierarchy. The course includes the various field visits and expose students about practical aspect of theory topics, in practice.

12) Public Health Surveillance and Outbreak Investigation CODE-EPI 331

This course would cover definition of public health surveillance; its components; methods of data collection for public health surveillance; sources for data that can be used for public health surveillance; uses of public health surveillance, criteria for prioritizing infectious diseases for surveillance; flow of information for infectious diseases under surveillance and

concept and objectives of screening. This course would help students to learn various aspects of ideal candidate disease for screening, attributes of a good screening test. Field visits to the disease surveillance unit of Ministry of Health would help in getting familiar with real time experience in data collection, compilation, analysis, and interpretation and dissemination mechanism. This course would emphasize on basic understanding of HESN (Health Electronic Surveillance Network), software used by MOH for data collection, compilation, analysis, interpretation and dissemination. Students would be exposed to the scientific logic of immediate (24 hours), weekly, monthly and importance of zero reporting. The outbreak trend is being analyzed from the data collected from surveillance and students will learn steps of outbreak investigation and how to control in field areas and healthcare settings.

13) Demography and Population Health

CODE-EPI 332

Demography is the study of human populations – their size, composition and distribution across place – and the process through which populations change. Births, deaths and migration are the ‘big three’ of demography, jointly producing population stability or change. A population’s composition may be described in terms of basic demographic features – age, sex, family and household status – and by features of the population’s social and economic context – ethnicity, religion, education, occupation, income and wealth. The distribution of populations can be defined at multiple levels (local, national, regional, global) and with different types of boundaries (political, economic, geographic). Population growth impact on society and environment was discussed within this course and a mitigation strategy like Reproductive Health was also highlighted. The course was concluded with the fact that Demography is a central component of planning for development and social change.

14) Global health and Mass Gathering

CODE-EPI 433

This course will explore the factors that explain the unequal distribution of health and disease in the world. The course will begin with an introduction to the language of global health: the burden of disease, epidemiology, cost-effectiveness, and health systems. It will then analyze the rationale for and modes of intervention to improve global health by exploring a number of high-profile topics, including determinants of global health. The course will incorporate knowledge and views from multiple academic disciplines regarding the development of global health policies and outcomes of global health interventions. The course enlightens the students about mass gathering with a special focus on Hajj and Umrah. The

course details about the surveillance strategies undertaken during mass gatherings. The course also focused on management of mass fatalities in mass gatherings like Hajj and Umrah

15) Epidemiology of Communicable Diseases **CODE-EPI 341**

This course discusses the major concepts in the epidemiology of communicable diseases with a special focus on locally prevalent communicable diseases of public health importance. Specific aspects include identification of the disease, its causative agent (infectious organism), geographic and demographic occurrence, reservoir(s), vector (if applicable), mode(s) of transmission, incubation period, period of communicability, prevention, control and implication of some diseases on public health locally and internationally

16) Epidemiology of Chronic Diseases **CODE-EPI 342**

This course would cover overview of the epidemiology of chronic diseases, associated risk factors, and health problems associated with industrialization, urbanization and development, general and specific preventive measures, control strategies and national programs for chronic diseases. It entails detailed description of various control strategies targeting modifiable risk factors through primordial, primary, secondary and tertiary level of prevention. The course features introduction to cancer registry, its importance, and components including methodology from peripheral level to national level data collection, collation, analysis, interpretation and dissemination of information. The course specifically sensitizes the students to the importance of chronic diseases in terms of enormity of the health challenges they pose.

17) Healthcare Associated Infections (HAIs) **CODE-EPI 343**

Health care associated infections (HAI) is a major *patient safety* issue for the patients and health care providers in any health care settings. As per WHO prevalence study in 55 hospitals of 14 countries in 4 WHO Regions average of 8.7% patients had HAI with the highest frequencies from East Mediterranean countries (11.8 %).

The course is developed with focus on preventing and controlling the HAIs in different health care settings. The student will learn how to reduce the burden of HAIs in Hospitals.

18) Evidence Based Practice

CODE-EPI 444

Evidence based practice is cited as the basis of all our public health and healthcare decisions, but what does that mean in practice? Evidence-Based Medicine (EBM) can be defined as the integration of individual clinical expertise with the best available external clinical evidence from systematic research. The fear on the part of many clinicians that their judgment is nullified by "practicing medicine by Medline search" is reduced by the fact that clinical expertise still plays a large part in any decision made on treatment, diagnosis, screening, etc. The fear on the part of many patients that clinicians are just making a guess and hoping for the best is nullified by reliance on strictly codified criteria of what constitutes good evidence and how to find it.

Evidence-based medicine (EBM) or evidence based practice (EBP), is the judicious use of the best current evidence in making decisions about the care of the individual patient. EBP also integrates clinical expertise and takes patient desires, values, and needs into consideration. EBP differs slightly from EBM, in that EBP is an umbrella term of sorts. EBP encompasses evidence-based medicine, evidence-based nursing, evidence-based physical therapy, evidence-based dentistry, etc.

19) e-Health in Public Health Practice (elective)

CODE-EPI 345

The course outlines the current practices and developments in the field of e-Health. It highlights the use of advanced technology to achieve provision of better quality healthcare services. The course provides an outline of using health applications like Electronic Health Record (EHR) software, Computerized Physician Order Entry (CPOE) and Clinical Decision Support Systems (CDSS), Telemedicine, m-Health and patient monitoring systems. It also describes the use of specific standards like HL7 for the purpose of integrating health services among various departments of a healthcare facility as well as integrating and communicating with multiple hospitals or facilities. The course features the trend of transition from the paper-based to paperless environment highlighting the merits of using the electronic form of record keeping.

20) Medical entomology:

CODE- EPI 346

This course describes Impacts of insects and insect-borne diseases on public health and well-being around the kingdom; insect biology, blood feeding, and transmission of human diseases; role of insect borne diseases on human history, socio-economic development, and public health infrastructure will be taught in this course. Topics like Biologies, disease relationships and control of insects and other arthropods parasitic on or in humans; aspect of the fields of clinical preventive medicine; survey, collection and taxonomy of medically important arthropods in laboratory sessions will be considered in the course.

21) Health Research Design

CODE-EPI 451

The course describes methods for planning and conducting scientific research. These includes identifying the research problem, formulating the research questions, setting research objectives, specifying the appropriate study design, designing of the study questionnaire, identifying methods of data collection, statistical analysis with interpretation and recommendations.

22) Capstone/Graduation project

CODE-EPI 459

The students are given the opportunity to integrate knowledge and skills that have been taught during the program to investigate a real life health problem. The students are classified into small groups (three students per group), during the seventh level. Members of each group are required to conduct literature review and develop a pre-proposal for studying an important health or health related problem in the local community, under supervision of the research advisor. The research advisor will provide guidance and act as a resource person for the research members, during the different activities of the graduation project that starts with developing the research pre-proposal in seventh level, to full research proposal and end with the graduation research report in eighth level

27) Health Ethics and Law

CODE- HSM 211

Ethics is a branch of philosophy. Ethical influence has changed the way human beings deal with issues. It continues to hold its ground in the modern world. Ethics is a means of monitoring man's activities. Ethical considerations are most important with the development of new technologies and new social systems. Ethical considerations cover all aspect of research but they are fore-grounded when the subjects of the research are humans or animals. This course deals with different ethical aspect in research and public health. Society is inherently conservative and seeks to set the limits of research activity therefore this course covers the impact of culture on ethics and more stress given to local context. This course also covers ethical issues in different fields of research i.e. human experimentation; issues of consent, drug trials; stem cell research; reproductive health, surrogacy, IVF, Organ transplantation and Islamic guiding principles, Quality of life; Assisted Prolongation of Life; End of life issues etc.. This course also covers the issue of plagiarism in research. This course gives brief idea of different public health laws in K.S.A.

28) Health care system and policies

CODE-HSM 212

This course is designed to introduce students from multiple disciplines to the fundamental characteristics of health care systems. This include the organization, financing, and delivery of services in the KSA health care system; the role of prevention and other non-medical factors in population health outcomes; key management and policy issues in contemporary health systems; and the process of public policy development and its impact on the prospects for health system improvement.

29) Health Economics

CODE- HSM 413

Universal access to basic healthcare is still a distant dream for many people around the globe and the provision of such care is constrained not only because of the scarcity of resources but also because of the absence of proper allocation and prioritization in healthcare systems. Health economics, relatively a young discipline, is a branch of economics concerned with issues related to scarcity in the allocation of health and health care. It aims at improving the health status of people with effective and efficient allocation and utilization of resources. In the Bachelors' Degree, credit course entitled 'Introduction to Health Economics', we aim to teach the economic aspects of healthcare systems with special reference to developing

countries and to demonstrate their potential application for better healthcare. The CREDIT course is organized under five topics

30) Health Services Management

CODE- HSM 414

The course is being designed to expose the students to learn the public health management skills to deliver effectively and efficiently the health care services to the population. The different management functions planning, organizing, staffing, directing, controlling, auditing, reporting, budgeting and innovation strategy is being taught during the course to make them an effective public health manager.

31) Healthcare Quality and Patients' Safety

CODE- HSM 415

The course is designed to make students understand quality, quality assurance, total quality management and quality of health care, Understand the framework of quality assurance through the three aspects of health care, namely: structure , process , and out- come. Recognize the availability or necessary resources for any program of quality assurance of health care. Assess the quality of health care. Identify the important factors necessary for the success of quality assurance program in health care services. The concepts of patients' safety by providing quality health care is being exposed to students to learn during the course know the quality assurance of health care in Saudi Arabia.

32) Health Disaster management:

CODE- HSM 416

The purpose of this course is to give the advance knowledge on the topics related to disaster and preparedness for the disaster. This course will enable students to understand the role of public health in disaster management, the various health management organizations and their structure responsible for the disaster response. This course also throws light on emergency information system and how it works. The course contains the different assessment used in disaster management, public health role in disaster, response, recovery and reconstruction. In addition, the course will enable students to understand the various evaluation methods for the assessment of public health and medical response to disaster.

33) Health Program Planning and Evaluation

CODE- HSM 417

The course is designed to enable students understand and apply basic principles of program planning and evaluation in public health. This would cover the situation analysis, different stages of planning, prioritizing the health problems for program implementation and allocating the resources. This would also cover the principles and basic methodology of monitoring and evaluation. This will enable them to understand the context of planning in public health monitoring to rectify the process, and evaluation to improve the objectives and comparison.

The course describes steps of health program planning and conducting evaluation of health programs. This includes defining community health problems, identifying unmet needs and surveying resources to meet them, establishing priority goals, that are realistic and feasible and Projecting administrative action to accomplish the purpose of proposed programs. This course encompasses concepts criteria of prioritizing public health problems, purpose statement, goals, objectives, monitoring, and evaluation of health programs and dynamics of team building.

34) GIS in Public Health

CODE- HID 439

The goal of this course is to leave students with appreciation of the power of Geographic Information Systems (GIS) to explore and analyse spatial health and medical data. The course will focus on organizing health data in a GIS, clustering detection methods, and basic spatial statistics. Other topics like agent-based models and visualization techniques will be touched upon. Lab work will provide hands on experience with example data, leaving students with a firm grasp of contemporary health and medical problems and a skill set of spatial analytical methods that can be used to solve them.

This course also offers an introduction to GIS and how it is used in public health and epidemiological research. You will learn how to use GIS to prepare and analyse data for studies of environment and health, use GIS to assess exposures to environmental pollution, and explore and analyse patterns and spread of disease. Specific skills and tools will be introduced in relation to assessing exposure to a range of environmental risks, and a particular focus will be given to methods for linking geographical and health data for epidemiological studies and health risk assessment.

35) ICD of Diseases and Deaths

CODE- HID 325

This course introduces the health coding and classification systems, keeping in reference the international standards of ICD 10. In addition, ICD-9-CM, Current Procedural Terminologies, Correct Coding Initiative, coding resources (Virtual Lab of AHIMA), and ethical issues in coding and classification is also discussed. It describes in detail about diseases and procedures classification by using International Classification of Disease (ICD9 & ICD 10) Clinical Modification and Current Procedural Terminology (CPT). Students learn about the basic principles of coding healthcare data by using ICD 10 CM, and understand the application of ICD 9CM including coding guidelines required for using codes such as E and V codes, E/M codes, Modifiers and CPT procedure codes. The students will be familiarized with the Super bill and CMS 1500 form which are commonly used in Healthcare for Reimbursement. It also outlines how to use ICD Manuals and CPT Manual for diseases and procedures respectively. This course also describes briefly about medical insurance and the procedure of reimbursement.

36) Health Records

CODE- HID 423

This course focuses on orienting the students to the health information management and functions and duties of health record department. This course emphasizes on creating, structuring, organizing and maintaining health record in a Medical Record Department (MRD). The course provides an overview of documentation in nursing wards, infection control department and long-term care. The relationship of medical record to health care delivery system is discussed along with various formats of medical records used locally and globally. The course then shifts the focus to 'Computerization of Health records' highlighting the need to implement electronic record systems and the phases required to do so. Students will also explore principles of information management like records disposition, principles and procedure used in health record organization, maintenance and retention, filing system, form control and design, and imaging. Professional standards in filing, naming, numbering, and the merits and demerits of each systems of record keeping are discussed. Legal aspect related to collection, relation and sharing of patient data, Doctor –patient confidentiality and ethical behavior will also be discussed.

37) Introduction to health education and promotion:

CODE- HEP 221

The purpose of this course is considered the most enriched course with the basic topics necessary in health education and promotion programs, including the general idea of evidence-based health education and promotion will be outlined (for HEP students and other students) to create a general understanding of what planned and systematic health education and promotion, Also it aims to provide general knowledge about concepts, philosophy, principles, planning, evaluation, communication & Communication skills, methods of Health education, health promotion health education concepts, Health Promotion competencies and health education, code of ethics approach(s) to the field after becoming familiar with the literature related to the discipline and engaging in a service-learning project.

38) Maternal and Child Health

HEP 334

This course provides introduction on women and child health. It covers the mother and child health concepts and needs, the various services available for MCH in general and in the Kingdom of Saudi Arabia in particular, as well as an overview of MCH program planning and management. Organized according to fundamental principles of MCH, the course covers traditional MCH topics such as family planning and maternal and infant health as well as skills that are applicable across Public Health disciplines such as planning, research, monitoring, and advocacy.

39) Principles of Environmental and occupational health **CODE- ENV 211**

This course gives overview of nature and magnitude of environmental and occupational disease; sources of exposure, methods of monitoring and modeling exposure; review of target organs and potential effects of specific chemicals; discussion of workplace hazards and monitoring programs.