



الجامعة الوطنية - السودان
National University - Sudan

M.Sc. in Public Health



Introduction

Public health is a specialty concerned with protecting and improving population health through disease prevention, health promotion, and evidence-based interventions. The Master of Science in Public Health program provides a comprehensive foundation in public health management and research, offering innovative knowledge and skills within a supportive learning environment. The program emphasizes the development of quantitative and qualitative analytical skills in epidemiology, biostatistics, and health services research.

Established in 2025 in response to the growing demand for qualified public health professionals, the program is aligned with local, national, and global health priorities. It prepares graduates for leadership roles in health promotion, disease prevention, health policy, research, and program management, equipping them with the competencies needed to improve population health and strengthen health systems.

General objective

Produce high-quality, competent public health specialists with an emphasis on education, service, and research to improve population health.

Specific objectives

The program qualifies candidates to:

- Foster a culture of inquiry and innovation through cutting-edge research, publications, and knowledge dissemination.
- Develop skilled public health professionals who are equipped to lead and implement effective public health interventions.
- Promote evidence-based practices and policies that improve the health of individuals and communities.
- Collaborate with government agencies, non-profit organizations, and international partners to address pressing public health issues.
- Advocate for equitable access to healthcare and social determinants of health for all populations.

- Promote and advocate for health and the prevention of diseases.
- Promote community awareness and education as an essential part of the curriculum, addressing priority health problems in Sudan.
- Provide services to socially, culturally, and economically diverse populations by being attentive to the needs of vulnerable and disadvantaged groups and being well-versed in existing health systems.
- Demonstrate ethics and accountability at all levels (professional, personal, and social)
- Demonstrate social accountability and responsibility
- Be an effective member of a multidisciplinary health team
- Commit to lifelong learning

Expected learning outcomes

By the end of the program, the candidate should be able to:

- Explain the foundational principles of public health, health professions education, and their role in improving population and community health outcomes.
- Apply biostatistical, epidemiological, and health informatics methods to collect, analyze, interpret, and communicate public health data.
- Describe the distribution, determinants, prevention, and control of diseases and health conditions in populations.
- Design and conduct public health research using appropriate study designs, methodologies, ethical principles, and proposal development processes.
- Assess occupational and environmental health hazards and propose evidence-based strategies to reduce associated health risks.
- Apply psychological, behavioral, and health communication principles to promote healthy behaviors and support health education initiatives.
- Plan, implement, and evaluate primary health care and health promotion interventions that address community health needs.
- Demonstrate ethical reasoning, professionalism, accountability, and adherence to public health codes of conduct in practice.
- Analyze communicable diseases, including their transmission, prevention, outbreak investigation, and control measures.

- Develop and evaluate interventions for the prevention and management of non-communicable diseases using behavioral and population-based approaches.
- Apply principles of health planning, management, leadership, and decision-making to improve health programs and services.
- Evaluate health policies and economic factors influencing health-care systems and apply policy analysis tools to promote equity and efficiency.
- Apply principles of disaster preparedness, emergency management, and coordinated health response during public health emergencies.
- Design and implement multidisciplinary public health interventions through effective collaboration across sectors and professions.
- Critically interpret, synthesize, and communicate public health evidence to support decision-making, research dissemination, and health system improvement.

Admission requirements

Applicant must satisfy the general regulations set by the faculty of graduate studies of the National University for registration for master's degrees.

Eligible applicants are holders of Bachelor's degrees with a grade of good minimum or cGPA ≥ 2.5 from the National University or from any other accredited University or a college in the following:

- Bachelor of Medicine and Surgery.
- Bachelor of Public Health.
- Bachelor of Pharmacy.
- Bachelor of Dentistry.
- Bachelor of Veterinary Sciences.
- Bachelor of Nursing Sciences and Midwiferies.
- Bachelor of Medical Laboratory Sciences.
- Bachelor of Radiography and Medical Imaging.
- Bachelor of Physiotherapy and Rehabilitation.
- Bachelor of Nutritional Sciences.
- Bachelor of International Health.

Study program

Semester One

Code	Course	Credit Hours	Contact hours/ week	
			Theory	Practical
MPH-PHE-611	Public Health & Health Professions Education	2	2	0
MPH-EPI-612	Epidemiology	3	2	2
MPH-BRM-613	Biostatistics and Research Methodology	5	3	4
MPH-ENV-614	Environmental Health	3	2	2
MPH-OCC-615	Occupational Health	2	1	2

Semester Two

Code	Course	Credit Hours	Contact hours/ week	
			Theory	Practical
MPH-PHC-621	Primary Health Care & Health Promotion	3	2	2
MPH-NFS-622	Nutrition, food hygiene, and safety	2	1	2
MPH-HEC-623	Health Education & Communication	2	1	2
MPH-NCD-624	Non-communicable Diseases	2	2	0
MPH-CDC-625	Communicable Diseases	2	2	0
MPH-IVM-626	Vector and Integrated Vector Management	2	2	0
MPH-INC-627	Infection control	2	1	2

Semester Three

Code	Course	Credit Hours	Contact hours/week	
			Theory	Practical
MPH-HME-631	Health Management, Policy & Economics	3	2	2
MPH-HIA-632	Health Impact Assessment	2	2	0
MPH-DME-633	Disaster Management and Emergencies	2	1	2
MPH-PHP-634	Public Health Ethics & Professionalism	2	1	2

Semester Four

Code	Course	Credit Hours	Contact hours/week	
			Theory	Practical
MPH-THE-635	Thesis	6	0	12

Course Contents

MPH-PHE-611 Public Health & Health Professions Education

This module introduces the principles and concepts of public health and health professions education, including definitions and determinants of health, core public health functions, health promotion, disease prevention, stakeholder engagement, community participation, public health surveillance, health policy and advocacy, ethics, infectious disease control, global health challenges, health equity and social determinants of health, educational theories and models, curriculum development, teaching and learning strategies, assessment and evaluation methods, interprofessional education, and presentation skills.

MPH-EPI-612 Epidemiology

This module provides knowledge and skills in epidemiological principles and methods, including epidemiological concepts and applications, disease distribution by person, place and time, study designs, measures of disease frequency and association, causality and association, inferential epidemiology, validity and reliability, bias and confounding, disease burden measurement, screening and diagnostic test evaluation, public health surveillance, outbreak investigation, and nutritional assessment.

MPH-BRM-613 Biostatistics and Research Methodology

This module develops competencies in biostatistics and research methodology, including statistical applications, variables and scales of measurement, probability distributions, descriptive and inferential statistics, sampling methods and errors, confidence intervals, hypothesis testing, correlation and regression, data presentation techniques, statistical software applications, research design, literature review, data collection methods, measurement and scaling techniques, qualitative and quantitative data analysis, research ethics, proposal development, report writing, grantsmanship, systematic reviews, and evidence synthesis.

MPH-ENV-614 Environmental Health

This module examines environmental determinants of health, including environmental impacts on health, water purification, water quality and sanitation, water pollution and water-borne diseases, air pollution, solid and hazardous waste management, toxicology and chemical safety, radiation and noise pollution, ventilation, temperature and humidity control, epidemiology of environmental diseases, vector control, zoonotic diseases, environmental legislation and policy, healthy cities, urban planning, climate change, and environmental justice.

MPH-OCC-615 Occupational Health

This module will address occupational health principles, including occupational diseases and hazards, workplace exposure assessment, biological monitoring, respiratory and skin diseases, noise-induced hearing loss, muscu-

loskeletal disorders and ergonomics, psychological and stress-related conditions, toxicology and chemical exposure, occupational surveillance and medical monitoring, engineering and administrative controls, personal protective equipment, occupational health legislation, workplace safety, training, education, and occupational disease investigation and management.

MPH-PHC-621 Primary Health Care & Health Promotion

This module covers the principles and elements of primary health care, primary health care development, universal health coverage, immunization programs, cold chain management, vaccination surveillance, health promotion theories and approaches, determinants of health, health promotion strategies and action areas, reproductive health, family planning, maternal health, female genital mutilation, nutrition and nutritional assessment, school health services, community participation, health equity, health literacy, and health program planning and evaluation.

MPH-NFS-622 Nutrition, Food Hygiene and Safety

This module provides an understanding of nutrition, food hygiene and food safety, including principles of nutrition, nutritional assessment, food contamination, foodborne diseases, food hygiene practices, food preservation and storage, temperature control, food safety standards, Hazard Analysis and Critical Control Point (HACCP), food adulteration, pesticide residues, food legislation, sanitation procedures, and the role of nutrition in disease prevention and health promotion.

MPH-HEC-623 Health Education & Communication

This module introduces theories and principles of health education and communication, including health behavior and decision-making, communication techniques in healthcare settings, empathy and compassionate communication, health education planning and evaluation, mental health promotion, motivational interviewing, behavior change strategies, communication with families, caregivers, communities, leaders, health authorities and international organizations, legal and ethical issues in health education, health promotion,

advocacy, and health education interventions targeting nutrition, communicable and non-communicable diseases, safety, reproductive health, and community wellbeing.

MPH-NCD-624 Non-Communicable Diseases

This module addresses the epidemiology, burden, risk factors, prevention, control, and surveillance of major non-communicable diseases, including hypertension, diabetes mellitus, chronic kidney disease, cardiovascular diseases, respiratory diseases such as asthma and COPD, cancer, accidents and injuries, and population-based approaches for disease prevention and health promotion.

MPH-CDC-625 Communicable Diseases

This module examines communicable diseases of public health importance, including disease transmission and control, disease burden, neglected tropical diseases, malaria, diarrheal diseases, hemorrhagic fevers, schistosomiasis, brucellosis, typhoid fever, HIV/AIDS, zoonotic diseases, viral hepatitis, hydatid disease, sexually transmitted infections, emerging and re-emerging infectious diseases, outbreak investigation, and communicable disease surveillance.

MPH-IVM-626 Vector and Integrated Vector Management

This module focuses on vector biology and vector-borne diseases, including principles of integrated vector management, chemical, biological, genetic and environmental vector control methods, insecticide resistance, vector surveillance and monitoring, environmental management, source reduction, community participation, health education, policy and legislation, One Health approaches, and the design, implementation, monitoring and evaluation of vector control programs.

MPH-INC-627 Infection Control

This module provides knowledge and skills in infection prevention and control, including infectious agents and transmission routes, standard and transmission-based precautions, hand hygiene, personal protective equipment,

cleaning, disinfection and sterilization, healthcare-associated infections, infection surveillance and reporting systems, outbreak investigation and response, staff health and immunization, occupational safety, infection control policies, and emergency preparedness.

MPH-HME-631 Health Management, Policy and Economics

This module introduces health systems management, policy and economics, including health system building blocks, planning and strategic management, supportive supervision, leadership, human resource management, capacity building, performance appraisal, job descriptions, conflict resolution, monitoring and evaluation, budgeting, quality management, health programs, health policy frameworks, health economics principles, supply and demand, market failure, health financing, health insurance, economic evaluation, health equity, global health governance, international health regulations, policy implementation, and policy monitoring and evaluation.

MPH-HIA-632 Health Impact Assessment

This module provides an understanding of Health Impact Assessment (HIA), including concepts, models and types of HIA, health determinants, public policy, screening and scoping processes, data collection, health impact analysis, development of recommendations, reporting, stakeholder engagement, intersectoral collaboration, monitoring and evaluation, quality standards, ethical considerations, communication strategies, and integration of health considerations into planning and policy development.

MPH-DME-633 Disaster Management and Emergencies

This module addresses disaster preparedness, response, recovery and mitigation, including disaster concepts and classifications, disaster management cycles, emergency preparedness and response planning, recovery and rehabilitation, risk assessment and vulnerability analysis, community resilience, ethical and legal considerations, human rights in disasters, health system preparedness, climate change and disasters, GIS and early warning systems, disaster technologies, stakeholder coordination, and case studies of major disasters.

MPH-PHP-634 Public Health Ethics and Professionalism

This module explores ethical principles and professionalism in public health practice, including autonomy, beneficence, non-maleficence, justice, professional codes of conduct, confidentiality, informed consent, patient rights, cultural competence, ethical decision-making, professional accountability, legal and regulatory frameworks, professional boundaries, teamwork, communication, reflective practice, ethical leadership, and challenges to professionalism.

MPH-THE-635 Thesis

This module enables students to undertake independent public health research through research question development, literature review, study design, methodology selection, ethical approval processes, data collection, statistical analysis, interpretation of findings, critical appraisal of evidence, scientific writing, thesis preparation, oral presentation and defense, dissemination of research findings, and contribution to public health knowledge and practice.

Human resources and facilities

Teaching staff:

- Two professors
- Three associate professors
- Five assistant professors
- Three lecturers

Lecture Rooms:

One Lecture Room:

- 70 seats

4 Tutorial room:

- 20 seats each

- PHC Center

Laboratories:

- Computer lab

Libraries:

- University Main Library
- E-library

Duration of the program

Three Semesters = 50 weeks

Teaching modules

Lectures; seminars; tutorials; interactive learning: group discussion; self-directed learning; journal clubs; problem-solving sessions; role play; practical work: fieldwork and visits to health authorities; hands-on training with statistical software for surveys; on-campus workshops; conducting an original piece of research; dissertation writing.

Teaching language: English.

Examinations regulations

- Abide by the examination rules of the general regulations of the graduate studies of the National University of Sudan.
- A student failing any supplementary examination should repeat the course.
- Duration of the dissertation is 15 weeks. If need be, a six-week extension is allowed upon approval by the program coordinator.
- A student scoring less than 60% in the dissertation oral examination will be allowed only one more chance.
- All students shall sit for oral and dissection examinations at the end of semester four.

Assessment:

- Continuous assessment 30 %
- Final examination 70%

Grading system:

A+ (90-100) A (80-89) B+(75-79) B (70-74) C+(65-69) C(60-64) F (<60)

Award of the degree

The Scientific Council of the National University, based on the recommendation of the board of the Faculty of Graduate Studies, shall award the successful candidate

M.Sc. Public Health



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