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HIGHER EDUCATION COMMISSION

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Deputy Director
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No. HEC/CD/NCRC/PH/2024/7279
March 12, 2025

SUBJECT: **REVISED CURRICULUM FOR DEGREE PROGRAMS IN PUBLIC HEALTH**

The Higher Education Commission (HEC) of Pakistan, as mandated by its law, provides guidance to Higher Education Institutions (HEIs) on curricula for tertiary education levels in alignment with the National Qualifications Framework (NQF). To address evolving academic trends and market demands, HEC has revised the curriculum standards for Public Health degree programs at NQF levels 6 and 7 through National Curriculum Review Committee (NCRC). These updated standards are intricately aligned with HEC's Undergraduate Education Policy V 1.1 (2023) and Graduate Education Policy (2023), ensuring coherence with national priorities and adherence to international benchmarks.

02. The revised curricula for Public Health degree programs are hereby notified. Universities offering these programs are advised to align their public health curricula with these revised standards as a minimum requirement. Additionally, course contents should be developed according to the curriculum, in a way that the content address the national and local industry needs and be submitted electronically to this office. An electronic copy of Public Health curriculum is available on HEC's official website.

03. Through the effective implementation of these standards, HEC seeks to empower Pakistani Public Health graduates with a comprehensive understanding of global health issues, enabling them to excel in the field of Public Health, promote Pakistan's health priorities, and drive meaningful change both locally and globally.

MUHAMMAD TUFAIL QURESHI

Vice Chancellors/Rectors/Heads
All Public/Private Sector Universities/DAIs

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CURRICULUM OF PUBLIC HEALTH
ASSOCIATE DEGREE | BS | MS

(REVISED 2025)

HIGHER EDUCATION COMMISSION

ISLAMABAD – PAKISTAN

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PREFACE

Higher Education Commission, mandated by section 10 (v) of its Ordinance, has been involved in developing / revising the curricula on periodic basis through National Curriculum Revision Committees (NCRCs) comprising of eminent academics, researchers from HEC recognized universities/DAIs, professional councils, R&D organizations of repute and industry professionals. So far, HEC has developed and revised curricula of 150+ disciplines for undergraduate and graduate programs in various fields of Natural Sciences, Applied Sciences, Social Sciences, Art & Humanities, Engineering & Technology, Medical, Allied Health Sciences, Agriculture, Computing, Law, and Administration.

Over time, labor markets in the world have substantially changed, hence, workforce skills demand has also altered. Due to these transformations, there is a need to produce well-rounded individuals who not only have the required knowledge base of specific discipline but also possess the skills to increase their market readiness to contribute to the overall socio-economic development of the country.

HEC has introduced the Undergraduate Education Policy 2023 and Graduate Education Policy 2023, which provides an overarching framework for undergraduate and graduate programs. This curriculum document is prepared in light of these policies. I hope that this document, prepared by the respective NCRC, would serve the purpose of meeting our national, social, and economic needs, and it would also provide the level of competency specified in Pakistan Qualification Framework to make it compatible with international educational standards.

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Director General (Academics)

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GUIDING PRINCIPLES

MINIMUM STANDARDS

The curricular standards and guidelines prescribed under this policy are mandatory at minimum level. Universities or the concerned departments may however set higher standards provided that the standards prescribed herein are not reduced or compromised.

COURSE SEQUENCE, TITLES AND CREDITS

For Bachelor of Science in Public Health (BSPH) and Master of Science in Public Health (MSPH), the sequence of courses prescribed under this document is logically arranged and is suggestive only. The offering department may rearrange the sequence and alter the course titles and credits provided that the essence of the courses prescribed in the document remains intact. The department may add more courses as and when required subject to adherence to HEC Policies and approval of university's relevant statutory body.

COURSE LEARNING OUTCOMES

Course learning outcomes (CLOs) are the bare minimum standards of learning that students must achieve upon completing a specific course. These outcomes serve as essential benchmarks, ensuring consistency in the quality of education across institutions. The CLOs prescribed herein represent the minimum level of competency and understanding expected from students. While these standards must not be compromised, departments are encouraged to enhance the rigor of the CLOs by incorporating additional learning outcomes, provided these do not alter the essence of the prescribed standards. In this document, CLOs are exclusively developed for major field courses within the program. For interdisciplinary courses, departments offering these courses are responsible for developing their CLOs in alignment with their respective disciplines and program requirements. Moreover, CLOs for elective courses are not prescribed here, as these are advanced or specialized courses. The development of CLOs for electives is the responsibility of the respective departments, taking into account the course's advanced nature and relevance to the program. For general education courses as required under the HEC Undergraduate Education Policy V 1.1., departments may adopt the CLOs prescribed in the HEC-developed model courses.

COURSE SYLLABUS

This document serves as a comprehensive guideline delineating the course learning outcomes (CLOs) for each course offered in the Bachelor of Science in Public Health (BSPH) and Master of Science in Public Health (MSPH) as minimum standards. The offering department may prepare, modify, and tailor the syllabus of each course, ensuring alignment with the stipulated learning outcomes. It is in this regard imperative that the department utilizes instructional, reference, and reading materials that it deems appropriate to effectively meet the CLOs.

REQUIREMENT OF GENERAL EDUCATION

For Bachelor of Science in Public Health, the courses prescribed for General Education component must mandatorily be offered with the same titles and minimum credits as prescribed under HEC Undergraduate Education Policy V 1.1 including the course of "Pakistan Studies". The concerned departments may adopt and follow the learning outcomes and study contents developed by HEC for these courses as available on its website.

REQUIREMENT OF INTERNSHIP

It is a mandatory degree award requirement of three (03) credit hours for Bachelor of Science in Public Health. Internship of six (06) to eight (08) weeks (preferably undertaken during semester or summer break) must be graded by a faculty member in collaboration with the supervisor in the field. This requirement cannot be substituted with additional course work, capstone or project work.

REQUIREMENT OF CAPSTONE PROJECT

It is a mandatory degree award requirement of three (03) credit hours for Bachelor of Science in Public Health. A capstone project is multifaceted body of work that serves as a culminating academic and intellectual experience for students. The capstone project must be supervised and graded by a faculty member as per the protocols prescribed by the concerned department. This requirement cannot be substituted with additional course work or internship.

ASSOCIATE DEGREE IN PUBLIC HEALTH

The eligibility criteria and the first-four semesters of the Bachelor of Science in Public Health as prescribed in this document guide the admission requirement and the structure of Associate Degree in Public Health. Field experience/internship is not a mandatory requirement for the Associate Degree in Public Health.

GENERAL ELECTIVES

The scheme of study prescribed for the four-year undergraduate degree in Public Health is based on seven (07) electives. Where the seven (07) courses for electives are adopted from more than one specialization domains, they will be considered as general electives and the degree will be awarded as Bachelor of Science in Public Health in its generic form and without any specialization.

ELECTIVES

1. In accordance with the National Qualifications Framework, the department may offer at least seven (07) electives comprised of 21 credit hours (minimum of 25 % of the main field i.e., Public Health that is comprised of 75 credit hours) to meet the criteria of nomenclature with specialization. Where the range of major exceeds beyond seventy-five (75) credit hours, the number of specialization electives will accordingly be increased.
2. Where the electives are adopted from within a single specialization domain, the degree will be offered as Bachelor of Science in Public Health (with name of specialization) in accordance with the National Qualifications Framework (2015) such as Bachelor of Science in Public Health (Global Health) etc.
3. Where the electives are adopted from more than one specialization domains, the degree will be awarded as Bachelor of Science in Public Health in its generic form and without any specialization.
4. Subject to approval of the relevant statutory body, the department may develop additional specializations other than those prescribed in this policy.
5. It should however be noted that offering of the degree program with specialization is prescribed in this document as an option only and not as a mandatory requirement or a binding on the offering department. In view of this, the concerned department may consider to offer the degree program with specialization or not, as per its available academic, human and infrastructural resources.

ENTRY AND EXIT PROVISIONS AT UNDERGRADUATE LEVEL

a. PATHWAY FOR GRADUATES WITH ASSOCIATE DEGREE

- Students having completed Associate Degree in Public Health are allowed admission in the fifth semester of the Bachelor of Science in Public Health without any deficiency course.
- Students having completed Associate Degree in any discipline related to the field of Public Health shall be required to complete deficiency courses through a bridging semester before the fifth semester admitting university.
- The minimum eligibility for admission in the fifth semester in above cases is 2.00/4.00 CGPA in the prior qualification i.e., Associate Degree. The concerned university may,

however, set higher eligibility and admission criteria for admission in the fifth semester of Bachelor of Science in Public Health.

b. PATHWAY FOR GRADUATES WITH CONVENTIONAL BSC/EQUIVALENT DEGREE PROGRAMS

- Students having completed two-year conventional BSc/equivalent degree programs are allowed admission in the fifth semester of Bachelor of Science in Public Health in which case, such students shall be required to complete deficiency courses through a bridging semester before the fifth semester, as determined by the admitting university.
- The minimum eligibility for admission in the fifth semester in this case is 45% cumulative score in the prior qualification i.e., two-year conventional BSc/equivalent degree programs. The concerned university may however set higher eligibility and admission criteria for admission in the fifth semester of Bachelor of Science in Public Health.

c. EXITING FROM BACHELOR OF SCIENCE IN PUBLIC HEALTH WITH THE ASSOCIATE DEGREE

- Students enrolled in Bachelor of Science in Public Health are allowed to exit the program with the status of an Associate Degree provided that they have completed the requirements of the first-four semesters of the BS degree program as prescribed in this document and maintained a minimum CGPA of 2.0/4.0. The name of the subject field on the degree shall remain the same in which the student was initially enrolled for the undergraduate/equivalent degree program.

BACHELOR OF SCIENCE IN PUBLIC HEALTH

PROGRAM DESCRIPTION

The Bachelor of Science in Public Health (BSPH) program is structured in accordance with the HEC Undergraduate Education Policy V 1.1. to provide students with a comprehensive and interdisciplinary understanding of the Public Health domain and equip them with the knowledge and skills to address complex health challenges at local, national, and global levels. The program encompasses key areas of Public Health including epidemiology, biostatistics, RMNCH (Reproductive Maternal Neonatal and Child Health), NCD & CD, environmental health, health policy and management, social and behavioral sciences, while focusing on promoting health, preventing disease, and improving quality of life.

Over eight semesters, the curriculum is designed to foster a progressive development of students' theoretical knowledge, analytical skills, and practical understanding, delivering a balanced and robust educational journey. The curriculum is designed to cultivate critical thinking and research skills essential for addressing public health issues. Students are prepared to design, implement, and evaluate culturally competent and socially relevant public health interventions while fostering leadership, advocacy, and ethical decision-making skills to improve population health outcomes. Graduates of the Bachelor of Science in Public Health program will be well-prepared for diverse career opportunities in government health agencies, non-governmental organizations, hospitals, research institutions, and the private sector. They will also be equipped to pursue advanced studies in Public Health and related interdisciplinary areas, both nationally and internationally.

STANDARD NOMENCLATURE

The scheme of study prescribed for the four-year undergraduate degree in Public Health is based on a total of seven (07) electives. Where the electives are adopted from within a single specialization domain, the degree will be offered as Bachelor of Science in Public Health (with name of specialization) in accordance with the National Qualifications Framework (2015), and where the seven (7) courses are adopted from more than one specialization domains, the degree will be awarded as Bachelor of Science in Public Health in its generic form and without any specialization.

PROGRAM LEARNING OUTCOMES

By the completion of Bachelor of Science degree in Public Health, the graduates will be able to:

a) Demonstrate a comprehensive understanding of fundamental and advanced concepts in public health and their relevance to contemporary global trends.
b) Apply critical thinking skills to identify, assess, and propose solutions to public health challenges at individual, community, and population levels.
c) Design and evaluate culturally competent and evidence-based public health interventions to address health disparities.
d) Communicate public health information to diverse audiences using appropriate channels.
e) Integrate ethical principles and professional values in public health practices.
f) Collaborate with interdisciplinary teams to plan, implement, and evaluate public health programs and policies that enhance population health outcomes.

ELIGIBILITY & ADMISSION CRITERIA

Higher Secondary School Certificate (involving 12 years of schooling) or an IBCC equivalent qualification in pre-medical group is the basic eligibility requirement for admission in the Bachelor of Science in Public Health. The concerned university may set higher standard and may conduct entry / admission test through its own testing body or an external testing services provider of repute as per the screening, admission and merit calculation criteria approved by its statutory bodies.

PROGRAM STRUCTURE

The Bachelor of Science in Public Health is structured in accordance with the provisions of the HEC Undergraduate Education Policy V 1.1. and comprises of minimum 125 credit hours (including internship / field experience) spread over eight (08) regular semesters. Universities may offer courses up to maximum of 144 credit hours provided that the total number of credit hours are reasonably set to achieve the Program Learning Objectives (PLOs) without putting undue burden on students.

Minimum Credit Hours (Including all program related requirements)	125
General Education Courses	32 credit hours (13 courses as prescribed by HEC Undergraduate Education Policy V 1.1)
Discipline Related Courses / Major	75 credit hours (25 courses)
Interdisciplinary / Allied Courses	12 credit hours (4 courses)
Internship	3 credit hours
Capstone Project	3 credit hours
Program Duration	Minimum: 4 Years Maximum: 6 Years (Further extendable by another year subject to approval of university's statutory body)
Semester Duration	16-18 weeks for regular semesters (1-2 weeks for examination) 8-9 weeks for summer semesters (1 week for examination)
Course Load (per semester)	15-18 credit hours for regular semesters Up-to 8 credit hours for summer semesters (For remedial/deficiency/failure/repetition courses only)
3 Credit Hours (Theory)	3 classes (1 hour each) OR 2 classes (1.5 hour each) OR 1 class (3 hours) per week throughout the semester

Standard scheme of study for the program of Bachelor of Science in Public Health (irrespective of the area of specialization) is given as under:

SEMESTER I			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Introduction to Public Health	3 (3-0)	Major
2	Quantitative Reasoning – I *	3 (3-0)	General Education
3	Natural Science **	3 (2-1)	General Education
4	Functional English *	3 (3-0)	General Education
5	Applications of Information & Communication Technologies (ICT) *	3 (2-1)	General Education
Total Credits (15)			

SEMESTER II			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Life Sciences Biology-I	3 (3-0)	Major
2	Concept of Health & Disease	3 (3-0)	Major
3	Medical Anthropology	3 (3-0)	Major
4	Quantitative Reasoning – II *	3 (3-0)	General Education
5	Expository Writing *	3 (3-0)	General Education
6	Pakistan Studies *	2 (2-0)	General Education
Total Credits (17)			

SEMESTER III			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Life Sciences Biology-II	3 (3-0)	Major
2	Fundamentals of Health Systems	3 (3-0)	Major
3	Health Promotion	3 (3-0)	Major
4	Arts & Humanities ****	2 (2-0)	General Education
5	Islamic Studies * (Religious Edu / Ethics for non-Muslim students)	2 (2-0)	General Education
6	Ideology & Constitution of Pakistan *	2 (2-0)	General Education
Total Credits (15)			

SEMESTER IV			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Basic Epidemiology-I	3 (3-0)	Major
2	Biostatistics-I	3 (3-0)	Major
3	Primary Health Care	3 (3-0)	Major
4	Social Science ***	2 (2-0)	General Education
5	Civics & Community Engagement *	2 (2-0)	General Education
6	Entrepreneurship *	2 (2-0)	General Education
Total Credits (15)			

SEMESTER V			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Basic Epidemiology-II	3 (3-0)	Major
2	Biostatistics-II	3 (3-0)	Major
3	Population Dynamics	3 (3-0)	Major
4	Reproductive Health	3 (3-0)	Major
5	Interdisciplinary / IDS Course – I *****	3 (3-0)	Interdisciplinary
Total Credits (15)			

SEMESTER VI			
S.N.	COURSE	CREDIT HOURS	CATEGORY

1	Research Methods in Public Health	3 (3-0)	Major
2	Community Nutrition	3 (3-0)	Major
3	Elective – I ******	3 (3-0)	Major
4	Elective – II ******	3 (3-0)	Major
5	Interdisciplinary / IDS Course – II *****	3 (3-0)	Interdisciplinary
Total Credits (15)			

SEMESTER VII			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Communicable and Non-Communicable Diseases	3 (3-0)	Major
2	Interdisciplinary / IDS Course – III *****	3 (3-0)	Interdisciplinary
3	Elective – III ******	3 (3-0)	Major
4	Elective – IV ******	3 (3-0)	Major
5	Interdisciplinary / IDS Course – IV *****	3 (3-0)	Interdisciplinary
Total Credits (15)			

SEMESTER VIII			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Environmental and Occupational Health	3 (3-0)	Major
2	Elective – V ******	3 (3-0)	Major
3	Elective – VI ******	3 (3-0)	Major
4	Elective – VII ******	3 (3-0)	Major
5	Capstone Project	3 (3-0)	Capstone
Total Credits (15)			

Note: Internship of three (03) credit hours must be completed in accordance with HEC Undergraduate Education Policy V 1.1. This requirement cannot be substituted with additional coursework, capstone, research or project work.

* HEC designed model courses may be used by the university.

** The university/offering department may offer any course in the broader category of **"Natural Sciences"** which should have relevance to the purpose of the degree program.

*** The university/offering department may offer any course in the broader category of **"Social Sciences"** including but not limited to a course of Psychology, Sociology, Anthropology etc.

**** The university/offering department may offer any course in the broader category of **"Arts & Humanities"** including but not limited to a course of regional or international language such as Chinese, Arabic, French, Spanish etc. or any other course such as Philosophy, History etc.

***** Students may opt **interdisciplinary courses** from other departments to complement their holistic understanding of the major field of study, as allowed by the admitting department. The list of interdisciplinary courses provided in this document is a recommended one only, and the offering department may add more courses as and when needed, provided that the same is approved by university's relevant statutory body. The minimum requirement for interdisciplinary courses for Bachelor of Science in Public Health, irrespective of the area of specialization, is twelve (12) credit hours, which may be increased, provided that the same is approved by the university's relevant statutory body.

****** Read in conjunction with guidance given on "**Standard Nomenclature**" in this document, the university / offering department may offer any seven (07) courses within one of the specializations or a mix from more than one specialization as prescribed in this document as **electives**, as per its program objectives and available academic and faculty resources.

Explanation on Offering of Electives:

In accordance with the National Qualifications Framework, the department may offer at least seven (7) electives comprised of 21 credit hours (minimum of 25 % of the main field i.e., Public Health that is comprised of 75 credit hours) to meet the criteria of nomenclature with specialization.

COURSE LEARNING OUTCOMES

INTRODUCTION TO PUBLIC HEALTH

By the end of this course, the students will be able to:

- Identify and explain fundamental concepts and definitions in public health.
- Understand historical context and evolution of public health.
- Explain key concepts and levels of prevention in public health practice.
- Identify and explain the core functions and essential services of public health.
- Recognize and describe the roles and responsibilities of stakeholders in public health.
- Describe factors influencing public health and strategies for improvement.

LIFE SCIENCES BIOLOGY-I

By the end of this course, students will be able to:

- Understand the basics of Anatomy, Physiology and Biochemistry.
- Explain the basic principles of Anatomy including human gross anatomy (structures) of both limbs, thorax, brain, head and neck, abdomen and Pelvis, general terminologies of Histology and Embryology, and Introduction of neuroanatomy of mankind.
- Explain the physiological processes of human cell, blood, nerve, muscle, cardiovascular system, body fluids and kidney (excretory system) and gastrointestinal tract (digestive system) and functions of nervous system, special senses, endocrines and reproductions of human beings.
- Explain biochemical role and functions of cell as well as role, types, functions and effects of macronutrients, carbohydrates, proteins and lipids. Introduction and importance of enzymes, vitamins, minerals, digestion mechanism, nutrition in human life.
- Apply biological concepts to understand human anatomy, physiology, and the biological basis of health and disease.

CONCEPTS OF HEALTH AND DISEASE

By the end of this course, students will be able to:

- Understand the biological, environmental, and social determinants of health and the impact of indicators and trends on individual and population health outcomes.
- Analyze the natural history of disease, identifying key mechanisms, risk factors, and clinical manifestations.
- Identify the socio-cultural aspects of health and illness, particularly as relating to the definitions of health, illness behavior and social epidemiology.

- Investigate the social causes of disease and illness related to disparities due to social stratification and unequal access.

MEDICAL ANTHROPOLOGY

By the end of this course, students will be able to:

- Understand the cultural, social, and historical contexts of health, illness, and medical practices across different societies.
- Describe the ways in which ideas regarding health, illness, and treatment are socially constructed.
- Explain how cultural beliefs and practices shape health behaviors, perceptions of illness, and approaches to healing.
- Conduct and present independent research on current popular health topics.
- Apply the arguments presented in academic articles to non-anthropological writing.

LIFE SCIENCES BIOLOGY-II

By the end of this course, students will be able to:

- Understand the basics of Pharmacology, Pathology and Forensic Medicine.
- Explain the basic principles of pharmacology, including basic terminology, drug identification, classification, drug action, metabolism, and therapeutic application, and adverse effects of major classes of drugs.
- Understand the basis of pathologic process, and the causes and potential complication of diseases.
- Evaluate ethical and legal considerations in forensic medicine and their implications in the healthcare field.
- Interpret and communicate findings effectively in the context of pharmacological studies, disease pathology, and forensic analysis.

FUNDAMENTALS OF HEALTH SYSTEMS

By the end of this course, students will be able to:

- Describe the structure, components, and functions of health systems at local, national, and global levels.
- Differentiate between various health system models, such as public, private, and hybrid systems.
- Identify the key stakeholders in a health system, including government agencies, healthcare providers, and non-governmental organizations.
- Evaluate the accessibility and quality of healthcare facilities in a given region using field research or simulated data.
- Analyze the levels of healthcare delivery, including primary, secondary, and tertiary care.

HEALTH PROMOTION

By the end of this course, students will be able to:

- Explain the principles and objectives of health promotion and its role in improving individual and community health.
- Analyze the social, economic, and environmental determinants of health and their influence on health outcomes.
- Design evidence-based health promotion interventions targeting specific populations or health issues.

- Create and deliver clear, engaging, and persuasive health promotion messages tailored to diverse audiences.
- Utilize various media platforms (digital, print, and social) to disseminate health information effectively.
- Facilitate community participation in health promotion planning and implementation.

BASIC EPIDEMIOLOGY -I

By the end of this course, students will be able to:

- Demonstrate an understanding of key epidemiological concepts, definitions, and principles, including incidence, prevalence, morbidity, mortality, risk factors, and causality in the study of diseases and health conditions in populations.
- Understand epidemiological study designs: cross-sectional, case-control, cohort, and experimental studies.
- Distinguish between descriptive, analytical, and experimental epidemiology.
- Understand the principles of disease prevention and control.

BIOSTATISTICS – I

By the end of this course, students will be able to:

- Demonstrate an understanding of key terms in biostatistics, including population, sample, variable, parameter, and statistic.
- Differentiate between types of data (e.g., nominal, ordinal, interval, ratio).
- Demonstrate an understanding of descriptive statistics for qualitative variables (ratio, proportion, frequency, and percentages).
- Demonstrate an understanding of descriptive statistics for quantitative variables through measures of central tendency (mean, median, mode) and dispersion (range, variance, standard deviation, confidence intervals).
- Familiarize with statistical software for variable and data entry.

PRIMARY HEALTH CARE

By the end of this course, students will be able to:

- Describe the principles and components of primary health care.
- Discuss the role of primary health care in addressing common health problems to improve health outcomes.
- Advocate for community participation in planning and delivery of primary health care services.
- Discuss the importance of intersectoral (education, water, and sanitation) coordination to address social determinants of health.
- Propose strategies for addressing challenges in delivering equitable health services.

BASIC EPIDEMIOLOGY -II

By the end of this course, students will be able to:

- Calculate basic epidemiological measures, including rates, ratios, and proportions.
- Apply basic epidemiological methods to design and conduct cross-sectional, case-control, cohort, and experimental studies.
- Interpret epidemiological data to identify patterns and trends of disease occurrence and distribution across populations and time.
- Communicate epidemiological findings and their implications to diverse audiences, including policymakers, public health professionals, and the general public.

BIOSTATISTICS – II

By the end of this course, students will be able to:

- Demonstrate an understanding of basic statistical concepts such as measures of central tendency, probability, and hypothesis testing in the context of public health data.
- Demonstrate descriptive data analysis for qualitative and quantitative health-related bases using statistical software.
- Construct and interpret tables, graphs, and charts for the presentation of data using statistical software.
- Discuss the application of statistical tests (Chi-square test, T-test, ANOVA, and correlation) for inferential statistics.
- Interpret the results of statistical analyses in the context of public health studies, identifying trends, correlations, and causality.

POPULATION DYNAMICS

By the end of this course, students will be able to:

- Define key terms in Demography such as population size, structure, growth, pyramid, and demographic transitions.
- Analyze trends in population growth and demographic transitions across different regions and time periods.
- Evaluate the impact of fertility, mortality, migration, and socio-economic conditions on population changes.
- Apply demographic tools and techniques to assess population structures and predict future population trends.

REPRODUCTIVE HEALTH

By the end of this course, students will be able to:

- Understand the biological, social, and cultural determinants of reproductive health across the lifespan, with a focus on fertility, pregnancy, and childbirth.
- Describe global and regional trends in reproductive health issues, including maternal mortality, contraception use, and the prevalence of sexually transmitted infections.
- Apply evidence-based strategies to enhance access to reproductive health services, with emphasis on family planning, health education, and equitable healthcare delivery.

RESEARCH METHODS IN PUBLIC HEALTH

By the end of this course, students will be able to:

- Demonstrate an understanding of key concepts of types of research and study designs.
- Apply appropriate research designs (qualitative, quantitative, or mixed-methods) in writing synopsis with a deeper comprehension.
- Demonstrate an understanding of research methodology by drafting research synopsis.
- Design a research study from conception to conclusion, showcasing the ability to apply theoretical knowledge in practical settings.
- Understand ethical principles including ethical review board approval, informed consent and confidentiality throughout the research process.
- Demonstrate the knowledge by writing a research article.
- Demonstrate the ability to understand research by critically appraising research articles.

COMMUNITY NUTRITION

By the end of this course, students will be able to:

- Demonstrate an understanding of the components of a healthy nutrition.
- Identify nutritional needs in a community setting by conducting needs assessments.
- Understand the dynamics of malnutrition among different age groups.
- Demonstrate effective communication strategies for individuals and groups through community education and awareness programs.
- Familiarize with the influence of socioeconomic, cultural, social, psychological, and ethnic food consumption issues and trends to nutrition practice.
- Develop nutrition interventions for individuals, groups and communities tailored to the community needs.
- Demonstrate advocacy for food security, public health nutrition policies and sustainable community-based interventions.

COMMUNICABLE AND NON-COMMUNICABLE DISEASES

By the end of this course, students will be able to:

- Explain the concepts of communicable and non-communicable diseases.
- Describe the different types of communicable and non-communicable diseases.
- Explain the modes of transmission and risk factors for major communicable and non-communicable diseases.
- Describe the global and national impact of CDs and NCDs.
- Understand the strategic control and prevention of CDs and NCDs.
- Describe the epidemiology and global burden of communicable and non-communicable diseases of public health importance.
- Understand the prevention and control strategies for communicable and non-communicable diseases.

ENVIRONMENTAL AND OCCUPATIONAL HEALTH

By the end of this course, students will be able to:

- Understand the effects of environmental factors (air, water, soil, climate) on human health.
- Describe risk assessment tools to identify and prioritize environmental health hazards.
- Describe environmental health policies and interventions at local, national, and global levels.
- Understand the principles and practices of occupational health, including the identification, evaluation, and control of workplace hazards.
- Understand physical, chemical, and psychosocial factors on workers' health and safety with a focus on mitigating risks.
- Describe occupational health programs emphasizing their role in preventing workplace injuries and promoting worker well-being.

RECOMMENDED LIST OF INTERDISCIPLINARY COURSES

Student may opt interdisciplinary courses from the following list where required in the scheme of studies for Bachelor of Science (BS) in Public Health, from other departments to complement their holistic understanding of the major, provided that the same is allowed by the admitting department. The list provided here is a recommended one only, and the offering department may add more courses as and when needed, provided that the same is approved by the university's relevant statutory body.

1. Health Economics

2. Behavioral Science in Health Promotion
3. Digital Health and Technology
4. Food Security and Nutrition
5. Sustainable Development and Health
6. Cultural Competence in Health
7. Population and Demographic Studies
8. Health Communication and Media
9. Community Health and Development
10. Geographic Information Systems (GIS) in Public Health
11. Emerging Infectious Diseases and Global Preparedness
12. Cultural Anthropology
13. Project Management
14. Program Planning and Evaluation
15. Systems Thinking
16. Water and Sanitation Health (WASH)
17. Microbiology
18. Entomology
19. Parasitology
20. Lifestyle Medicine
21. Health Professional Education

DEGREE AWARD REQUIREMENTS

The following minimum requirements are prescribed for award of Bachelor of Science degree in Public Health:

a) All courses in the General Education category with titles and credit hours as prescribed in HEC Undergraduate Education Policy V 1.1. including the course of "Pakistan Studies" must be completed.
b) Minimum of **125** credit hours, including all program related requirements, as prescribed in this document must be completed.
c) Capstone / research project of three (03) credit hours must be completed in accordance with HEC Undergraduate Education Policy V 1.1. This requirement cannot be substituted with additional coursework or internship.
d) Internship of three (03) credit hours must be completed in accordance with HEC Undergraduate Education Policy V 1.1. This requirement cannot be substituted with additional coursework, capstone, research or project work.
e) CGPA must not be below 2.00/4.00 at the time of completion of the degree program. The university may however set higher standard in this regard.
f) The minimum duration to complete the degree is eight (08) regular semesters spread over four (04) years. The duration may be extended in extra-ordinary circumstances, subject to approval of the university's relevant statutory body, provided that the total duration to complete the undergraduate degree program does not go beyond the maximum duration prescribed in HEC semester guidelines. Summer semester is not considered as a regular semester.

MAJOR SPECIALIZATIONS OF PUBLIC HEALTH

(NQF LEVEL 6 QUALIFICATIONS)

Following are few examples of specialization streams in case of Bachelor of Science in Public Health with specialization. Subject to approval of the relevant statutory body, the department may develop additional specializations other than those prescribed here. It should however be noted that offering of the degree program with specialization is prescribed as an option only and not as a mandatory requirement or a binding on the offering department. The concerned department may consider to offer the degree program with specialization or otherwise, keeping in view its available academic, human and infrastructural resources.

SPECIALIZATION 1: EPIDEMIOLOGY

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Geographic Information Systems (GIS) for Health
2. Outbreak Investigation and Response
3. Statistical Software for Epidemiology (e.g., SPSS, SAS, R)
4. Global Disease Surveillance
5. Molecular Epidemiology
6. Risk Factors and Prevention Strategies
7. Cancer Epidemiology
8. Social Epidemiology
9. Epidemiological Modeling and Forecasting

SPECIALIZATION 2: COMMUNITY HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Community Health Principles
2. Program Planning and Evaluation
3. Health Promotion and Behavior Change
4. Cultural Competency in Health Care
5. Community-Based Participatory Research (CBPR)
6. Addressing Health Disparities
7. Leadership in Community Health
8. Public Health Advocacy and Policy
9. Health Education Strategies
10. Social Determinants of Health
11. Community Engagement and Empowerment
12. Gender and Health in Communities
13. Urban and Rural Community Health Issues
14. Community Health Monitoring Tools
15. Ethics in Community Health Research
16. Community Pediatrics

SPECIALIZATION 3: GLOBAL HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Introduction to Global Health
2. Global Health Policy and Systems
3. Emerging Infectious Diseases

4. Refugee and Humanitarian Health
5. Global Nutrition and Food Security
6. Climate Change and Global Health
7. International Organizations and Public Health
8. Health Equity in a Global Context
9. Infectious Disease Control in Global Settings
10. Health System Strengthening in Developing Countries
11. Global Burden of Disease Studies
12. Global Reproductive Health
13. Global Health Advocacy and Diplomacy
14. Migration and Health
15. Ethics and Human Rights in Global Health
16. Fundamentals of One Health
17. AI in Public Health
18. Global Health Security

SPECIALIZATION 4: ENVIRONMENTAL AND OCCUPATIONAL HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Fundamentals of Environmental Health
2. Occupational Safety and Health Practices
3. Environmental Toxicology
4. Air and Water Quality Management
5. Industrial Hygiene
6. Risk Assessment in Environmental Health
7. Climate Change and Environmental Justice
8. Hazardous Waste Management
9. Urban Health and Sustainability
10. Food Safety and Public Health
11. Noise Pollution and Health Impacts
12. Exposure Science and Monitoring
13. Disaster Preparedness and Response
14. Ergonomics and Workplace Design
15. Policy and Regulation in Environmental Health

SPECIALIZATION 5: HEALTH POLICY AND MANAGEMENT

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Foundations of Health Policy
2. Strategic Health Care Management
3. Health Economics
4. Public Health Law and Ethics

5. Comparative Health Systems
6. Quality Improvement in Health Services
7. Leadership in Public Health Systems
8. Policy Analysis for Public Health
9. Decision-Making in Health Care Management
10. Public-Private Partnerships in Health
11. Financing and Budgeting in Health Systems
12. Digital Health Policy
13. Global Health Governance
14. Advocacy and Political Influence in Health
15. Human Resource Management in Health

SPECIALIZATION 6: NUTRITION AND PUBLIC HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Public Health Nutrition
2. Global Nutrition Challenges
3. Nutritional Epidemiology
4. Micronutrients and Health
5. Nutrition Across the Lifespan
6. Food Policy and Public Health
7. Obesity Prevention and Control
8. Diet and Chronic Disease
9. Nutrition Education and Counseling
10. Food Safety and Quality Control
11. Sports Nutrition
12. Global Malnutrition Strategies
13. Community-Based Nutrition Programs
14. Nutrigenomics and Health
15. Dietary Interventions for Public Health

SPECIALIZATION 7: BIOSTATISTICS AND DATA SCIENCE

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Statistical Programming for Public Health
2. Advanced Statistical Models
3. Survival Analysis Techniques
4. Bayesian Statistics in Health
5. Data Mining in Public Health
6. Predictive Analytics in Health Systems
7. Big Data Applications in Public Health
8. Machine Learning in Health Research

9. Spatial Statistics for Public Health
10. Health Data Visualization and Communication
11. Statistical Methods for Epidemiology
12. Data Management in Health Research
13. Causal Inference in Public Health Studies
14. Applied Multivariate Analysis

SPECIALIZATION 8: MATERNAL AND CHILD HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Maternal Health Principles
2. Child Health and Development
3. Reproductive Health and Family Planning
4. Perinatal Health Interventions
5. Nutrition for Mothers and Children
6. Adolescent Health Challenges
7. Gender and Health Disparities
8. Immunization Strategies for Children
9. Maternal Mental Health
10. Addressing Infant and Maternal Mortality
11. Maternal and Child Health Policy
12. Early Childhood Interventions
13. School Health Programs
14. Pregnancy Outcomes and Interventions
15. Advocacy for Maternal and Child Health

SPECIALIZATION 9: HEALTH COMMUNICATION

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Principles of Health Communication
2. Social Media in Public Health
3. Crisis Communication in Health
4. Behavioral Theories for Health Promotion
5. Digital Tools for Health Communication
6. Health Literacy in Public Health
7. Ethics in Health Communication
8. Advocacy Campaigns for Public Health
9. Design and Evaluation of Communication Strategies
10. Media Relations in Health Campaigns
11. Writing for Public Health Audiences
12. Visual Communication in Health Campaigns
13. Addressing Misinformation in Health

14. Communication for Health Equity
15. Research in Health Communication

SPECIALIZATION 10: INFECTIOUS DISEASE CONTROL

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Principles of Infectious Disease Control
2. Vaccination and Immunization Programs
3. Epidemiology of Infectious Diseases
4. Zoonotic Diseases and Public Health
5. Global Disease Surveillance Systems
6. Antimicrobial Resistance Management
7. Pathogen Genomics
8. Emerging and Re-Emerging Infections
9. Pandemic Preparedness and Response
10. HIV/AIDS Prevention Strategies
11. Waterborne and Foodborne Diseases
12. Infection Prevention in Health Care Settings
13. Tropical Infectious Diseases
14. Community-Level Disease Control
15. Policy and Advocacy in Infectious Disease

SPECIALIZATION 11: MENTAL HEALTH AND WELL-BEING

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Introduction to Public Mental Health
2. Behavioral Health Theories and Models
3. Mental Health Promotion and Prevention
4. Counselling Skills for Public Health Professionals
5. Substance Use Disorders and Public Health
6. Adolescent Mental Health Challenges
7. Psychological First Aid in Public Health
8. Trauma-Informed Care Practices
9. Suicide Prevention Strategies
10. Global Mental Health Initiatives
11. Ethics in Mental Health Policy
12. Addressing Stigma in Mental Health
13. Mental Health Across the Lifespan
14. Social Determinants of Mental Health
15. Technology-Assisted Interventions for Mental Health
16. Principles of Psychology
17. Prison Health Care

SPECIALIZATION 12: AGING AND GERIATRIC HEALTH
Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Fundamentals of Healthy Aging
2. Chronic Disease Management in Older Adults
3. Cognitive Health and Dementia Care
4. Nutrition for Aging Populations
5. Physical Activity and Fitness for Seniors
6. Elder Abuse and Neglect Prevention
7. Palliative and End-of-Life Care
8. Policy and Advocacy for Aging Populations
9. Social Isolation and Mental Health in Aging
10. Technologies for Aging in Place
11. Long-Term Care Systems
12. Geriatric Pharmacology and Medication Safety
13. Community Programs for Older Adults
14. Intergenerational Health Initiatives
15. Ethics in Geriatric Care

SPECIALIZATION 13: PUBLIC HEALTH INFORMATICS
Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Introduction to Public Health Informatics
2. Data Standards and Interoperability in Health IT
3. Electronic Health Records and Public Health
4. Predictive Analytics in Public Health Informatics
5. Machine Learning Applications in Public Health
6. Geographic Information Systems (GIS) for Public Health
7. Health Data Privacy and Security
8. Mobile Health (mHealth) Technologies
9. Data Visualization Techniques
10. Big Data in Public Health
11. Cloud Computing for Health Data
12. Bioinformatics in Public Health Research
13. Blockchain in Health Information Management
14. Evaluation of Health Informatics Systems
15. AI and Automation in Public Health

SPECIALIZATION 14: EMERGENCY PREPAREDNESS
Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Principles of Disaster Management

2. Public Health Preparedness Planning
3. Risk Communication in Emergencies
4. Logistics in Emergency Health Services
5. Environmental Disasters and Public Health Responses
6. Community Resilience and Recovery Programs
7. Public Health in Conflict Zones
8. Crisis Leadership in Public Health
9. Ethical Dilemmas in Emergency Situations
10. Hazardous Materials Management
11. Monitoring and Evaluation of Emergency Plans
12. Psychological Impact of Disasters
13. Global Disaster Risk Reduction Strategies
14. Climate Change and Disaster Preparedness

SPECIALIZATION 15: BEHAVIORAL AND SOCIAL SCIENCE IN PUBLIC HEALTH
Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Social Determinants of Health and Behavior
2. Theories of Health Behavior Change
3. Participatory Research Methods
4. Sociology of Health & Disease
5. Social Justice in Public Health
6. Community-Based Interventions
7. Behavioral Risk Factor Surveillance
8. Addressing Health Inequalities
9. Health and Social Network Analysis
10. Public Health Advocacy Techniques
11. Behavioral Economics in Public Health
12. Intersectionality and Health Outcomes
13. Cultural Competence in Health Programs
14. Qualitative Research Methods
15. Building Healthier Communities
16. Evaluation of Social Science Interventions

SPECIALIZATION 16: OCCUPATIONAL HEALTH AND SAFETY
Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Principles of Occupational Health
2. Workplace Hazard Identification
3. Ergonomics and Injury Prevention
4. Industrial Hygiene Practices
5. Occupational Disease Prevention

6. Workplace Safety Training Programs
7. Airborne Hazards in Occupational Settings
8. Health Surveillance in the Workplace
9. Regulatory Frameworks for Workplace Safety
10. Environmental Monitoring and Exposure Control
11. Occupational Toxicology
12. Risk Assessment in Occupational Health
13. Mental Health in Occupational Settings
14. Global Perspectives on Occupational Health
15. Technological Advances in Workplace Safety
16. Prison Health Care

SPECIALIZATION 17: HEALTH EQUITY AND ADVOCACY

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Foundations of Health Equity
2. Advocacy Skills for Public Health
3. Addressing Systemic Racism in Health
4. Policies for Underserved Populations
5. Community Organization for Health Justice
6. Cultural Competency in Health Programs
7. Intersectionality in Health Advocacy
8. Participatory Action Research Methods
9. Social Movements in Public Health
10. Global Health Equity Initiatives
11. Building Inclusive Health Policies
12. Addressing Urban and Rural Health Disparities
13. Youth Advocacy in Public Health
14. Empowering Marginalized Communities
15. Health Equity Metrics and Evaluation

SPECIALIZATION 18: URBAN HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Urbanization and Public Health
2. Planning Healthy Cities
3. Social Networks and Urban Health
4. Air and Water Quality in Urban Areas
5. Housing and Public Health Policy
6. Transportation and Health in Cities
7. Urban Food Systems and Security
8. Climate Resilience in Urban Settings

9. Urban Poverty and Health Disparities
10. Environmental Justice in Urban Areas
11. Noise Pollution and Urban Health
12. Community Engagement in Urban Planning
13. Monitoring Urban Health Indicators
14. Public Spaces and Mental Health
15. Urban Disaster Preparedness

SPECIALIZATION 19: TECHNOLOGY AND PUBLIC HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Innovations in Health Technologies
2. Digital Epidemiology
3. Wearable Health Devices and Data Collection
4. Mobile Health Applications (mHealth)
5. Blockchain Applications in Health Systems
6. Virtual Reality in Health Education
7. Social Media Analytics for Public Health Campaigns
8. Health Information Security and Cybersecurity
9. Internet of Things (IoT) for Health Monitoring
10. Artificial Intelligence in Health Research
11. Big Data Analytics for Population Health
12. Evaluation of Digital Health Tools
13. Ethical Issues in Digital Public Health
14. Health Data Standards and Interoperability
15. Emerging Technologies in Disease Surveillance

SPECIALIZATION 20: SEXUAL AND REPRODUCTIVE HEALTH

Below is the recommended list of courses within the given specialization. The concerned department may offer these seven (07) courses or any other course relevant to the given specialization, as per the availability of academic resources:

1. Sexual Health Education Strategies
2. Reproductive Rights and Justice
3. HIV/AIDS Prevention and Care
4. Family Planning and Contraception Methods
5. Gender-Based Violence Prevention
6. Adolescent Sexual and Reproductive Health
7. LGBTQ+ Health and Advocacy
8. Fertility and Infertility Care
9. Addressing STIs in Public Health
10. Global Reproductive Health Policies
11. Maternal and Reproductive Health Interventions
12. Cultural Perspectives on Sexual Health

13. Sexual Health Counseling Skills
14. Ethics in Reproductive Health
15. Technology in Sexual and Reproductive Health

MASTER OF SCIENCE IN PUBLIC HEALTH (MSPH)

PROGRAM DESCRIPTION

The Master of Science in Public Health program is designed to provide students with a rigorous and in-depth understanding of advanced theories, concepts, and methodologies in the field of Public Health. The program will equip students with the analytical skills and research expertise necessary to critically examine and address complex global and regional challenges, bridging theoretical frameworks with practical applications. The program spans four semesters, combining core courses with a selection of advanced electives that facilitate specialization in various subfields of Public Health. Students will engage in independent research, culminating in a thesis, which enables them to contribute original insights to the academic and policy discourse. The research component is supported by advanced training in research methods, enabling students to design and conduct robust studies using both qualitative and quantitative approaches. Throughout the program, students will enhance their ability to critically evaluate scholarly literature, apply theoretical frameworks to real-world scenarios, and produce research-driven solutions to global issues. They will also develop strong communication skills, enabling them to effectively present and disseminate their findings to diverse audiences. The ultimate goal of the program is to prepare graduates for impactful careers in the fields requiring expertise in Public Health including but not limited to health care organizations, academia, think tanks, policy-making institutions, and international organizations.

STANDARD NOMENCLATURE

To ensure uniformity, the standard nomenclature for all NQF level 7 qualifications in the field of Public Health shall be Master of Science in Public Health.

PROGRAM LEARNING OUTCOMES

By the completion of Master of Science in Public Health, the graduates will be able to:

a) Demonstrate advanced knowledge of theories, concepts, and methodologies in Public Health, integrating interdisciplinary approaches to analyze and address population health challenges at regional and global level.
b) Apply advanced analytical tools and research methodologies to design evidence-based public health interventions and policies to improve health outcomes.
c) Conduct independent, original research in Public Health, critically engaging with scholarly literature and employing advanced research methods to generate insights that contribute to the academic and policy discourse.
d) Effectively communicate complex ideas, research findings, and policy recommendations in Public Health, both orally and in writing, to diverse audiences, demonstrating clarity, coherence, and academic rigor.

ELIGIBILITY & ADMISSION CRITERIA

a) An undergraduate degree (involving 16 years of education) in, Bachelor of Science in Public Health (BSPS)/ MBBS/BDS/ MD/BSN/DVM/DPT/Pharm-D/BS Human Nutrition & Dietetics, MSc Epidemiology and BS equivalent qualification in any Allied Health related disciplines is the basic eligibility requirement for admission in the Master of Science in Public Health.
b) The candidates with 16-year qualification in any discipline other than mentioned at (a) above may also be enrolled in MSPH program provided that they possess a minimum 2 years of professional experience in public health areas. Such candidates shall be required to complete a total 54-60 credit hours including 24 credit hours deficiency courses for the award of MSPH degree.

c) The admitting university, in addition to the basic eligibility, is further required to conduct a rigorous admission test as an eligibility condition for admission to the program, with a passing score of 50% (OR) accept the GRE/HAT General/equivalent tests, with a passing score of 50%.

PROGRAM STRUCTURE

Standard structure of the NQF level 7 qualification in Public Health program, as recommended by the NCRC in Public Health, is as under

Credit Hours	Minimum 36
Course Work	Minimum 30 credit hours (10 courses)
Research Work / Thesis	Minimum 06 credit hours
Program Duration	Degree shall be awarded by the universities upon completion of 2 years or four (04) regular semesters. Maximum duration for award of the degree is four (04) years or eight (08) regular semesters, save exceptions mentioned below: In case a student is unable to secure an MS/MPhil within the prescribed timeframe and claims for extension in duration, the university may constitute appropriate authority and determine the causes of delay. In the event of force majeure (i.e., delay on account of circumstance beyond the control of student), the university may grant an extension in the period of award of MS/MPhil degree in accordance with the duration limiting factor(s) and shall also take corrective measures in case the delay is caused by process or administrative reasons.
Semester Duration	16-18 weeks for regular semesters (1-2 weeks for examination) 8-9 weeks for summer semesters (1 week for examination)
Course Load (per semester)	09-12 credit hours for regular semesters Up-to 8 credit hours for summer semesters (For remedial/deficiency/failure/repetition courses only)
3 Credit Hours (Theory)	3 classes (1 hour each) OR 2 classes (1.5 hour each) OR 1 class (3 hours)
1 Credit Hours (Lab / Field Work)	1 credit hour in laboratory or practical work would require lab / field contact of three hours per week throughout the semester.

The standard scheme of studies for NQF level 7 qualification in Public Health is given below:

SEMESTER I			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Social and Behavioral Aspects of Public Health*	3 (3-0)	Core
2	Basic Epidemiology and Biostatistics*	3 (3-0)	Core
3	Health System*	3 (3-0)	Core
Total Credits (9)			

SEMESTER II			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Research Methodology*	3 (3-0)	Core
2	Applied Epidemiology and Biostatistics*	3 (3-0)	Core
3	Environmental and Occupational Health*	3 (3-0)	Core
4	Communicable and Noncommunicable Diseases*	3 (3-0)	Core
Total Credits (12)			

SEMESTER III			
S.N.	COURSE	CREDIT HOURS	CATEGORY
	Health Promotion, Advocacy and Social Mobilization*	3 (3-0)	Core
1	Elective I**	3 (3-0)	Elective
2	Elective II**	3 (3-0)	Elective
3	Thesis/Dissertation/Research Project***		Research
Total Credits (9)			

SEMESTER IV			
S.N.	COURSE	CREDIT HOURS	CATEGORY
1	Thesis/Dissertation/Research Project *** (Continued)	6 (6-0)	Research
2	Practicum OR One Publication in Peer Reviewed Journal (HEC Indexed Journal)		Compulsory
Total Credits (6)			

* These are core mandatory courses for the program, irrespective of the area of specialization.

** The university/offering department may offer any advanced course in the field of Public Health as an **elective** where required, as per available academic and faculty resources.

*** In line with HEC's Graduate Education Policy (GEP) 2023, in a case a degree is offered with research work, the university shall develop a policy regarding thesis defense and evaluation through its statutory body.

The above Master of Science in Public Health (MSPH) program structure is recommended by the NCRC (Public Health) on the basis of HEC Graduate Education Policy 2023 and the recommendations of HEC's National Curriculum Development Committee (NCDC) in the discipline of Public Health, extended during the consultative meeting held on May 05, 2021. While offering the MS (Public Health) program, the universities are also required to refer to/comply with the guidelines and minimum requirements for award of MS/MPhil/equivalent degrees (level 7), as prescribed in HEC's Graduate Education Policy (GEP) - 2023.

COURSE LEARNING OUTCOMES

SOCIAL AND BEHAVIORAL ASPECTS OF PUBLIC HEALTH

By the end of the course, the students will be able to:

- Understand social context of health and disease.

- Examine public health through its historical context and use this information in the evaluation of current public health issues.
- Analyze a public health problem and evaluate interventions and policy alternatives using the problem-solving methodologies.
- Analyze data and behavioral research to develop public health intervention programs.
- Address public health issues from the perspective of human behavior.
- Work with communities to implement and evaluate public health programs.
- Help raise public awareness of best health care practices.

BASIC EPIDEMIOLOGY AND BIOSTATISTICS

By the end of the course, the students will be able to:

- Apply and design strategies commonly used for epidemiological studies.
- Assess the burden of disease using the measures of disease frequency.
- Investigate association in terms of strength of association, causality, bias and confounding.
- Apply screening in disease control.
- Classify variables and define the data types and the scales of measurements.
- Apply frequency distribution to a given data and its interpretation.
- Calculate the sampling errors and the standard error of a mean and a proportion and its interpretation.
- Calculate and interpret confidence intervals for a parameter and explain why it is necessary to calculate confidence interval in a data.
- Test hypothesis by using appropriate statistical methods and tests.

HEALTH PROMOTION, ADVOCACY AND SOCIAL MOBILIZATION

By the end of the course, the students will be able to:

- Describe health and its determinants.
- Understand the concept of health and factors contributing to health.
- Understand health promotion and its evolution.
- Learn the community action cycle and understand how to plan, implement, monitor, and evaluate a community mobilization program.
- Understand the role of advocacy, communication, and social mobilization and the role of these to promote behavioral change.
- Understand how social mobilization can empower communities to identify their needs and responsibilities, and organize resources for development.

RESEARCH METHODOLOGY

The critical analysis of the published scientific paper will be used as baseline to start with the concept of writing a proposal to enable the students to identify the scientific requirements of medical writing and the various components of the paper

By the end of the course, the students will be able to:

- Understand the significance of research in the context of health and disease.
- Select and prioritize topic for research with scientific reasoning.
- Conduct effective literature search.
- Develop objectives for logical thinking that emphasize scientific principles while simultaneously addressing language-related challenges.

- Design, conduct, and critically evaluate research studies, applying appropriate methodologies and statistical analyses to answer research questions.
- Develop critical thinking and creativity.
- Practice and promote professional ethics.
- Analyze health system problems.
- Involve in community dynamics and networking.
- Prepare for health advocacy, teamwork, and leadership.

APPLIED EPIDEMIOLOGY AND BIOSTATISTICS

By the end of this course the students will be able to:

- Calculate basic epidemiological measures, including rates, ratios, and proportions.
- Apply basic epidemiological methods to design and conduct cross-sectional, case-control, cohort, and experimental studies.
- Interpret epidemiological data to identify patterns and trends of disease occurrence and distribution across populations and time.
- Communicate epidemiological findings and their implications to diverse audiences, including policymakers, public health professionals, and the general public through reports and presentations.
- Apply measures of disease frequency in Public Health.
- Describe measures of association in cohort and case-control studies.
- Explain the role of confounders, bias, chance and effect modifiers in epidemiological studies.
- Apply the concept of screening in disease control.
- Assess the burden of disease using the measures of disease frequency.
- Demonstrate an understanding of basic statistical concepts such as measures of central tendency, probability, and hypothesis testing in the context of public health data.
- Demonstrate descriptive data analysis for qualitative and quantitative health-related bases using statistical software.
- Construct and interpret tables, graphs, and charts for the presentation of data using statistical software.
- Apply the parametric statistical tests (Chi-square test, T-test, ANOVA, and correlation) for inferential statistics and non-parametric tests for a single or more than one samples e.g., Wilcoxon's Rank sum tests, Mann-Whitney U-tests etc.
- Interpret the results of statistical analyses in the context of public health studies, identifying trends, correlations, and causality.
- Investigate the relationship between several variables using multiple regression and logistic regression.
- Evaluate interventions or programs using appropriate epidemiological and statistical methods.

ENVIRONMENTAL AND OCCUPATIONAL HEALTH

By the end of the course the students should be able to:

- Describe the core issues in Environmental Health.
- Describe the major types of environmental agents.
- Identify the carriers or vectors that promote the transfer of these agents from the environment to the human.
- Describe how these agents interact with biological systems, and the mechanisms by which they exert adverse health effects.

- Describe the existing situations and remedies in developing countries.
- Identify and define the steps in the risk-assessment and risk-management processes.
- Identify and describe current and emerging environmental problems that pose a risk to public health.
- Explain the fundamental principles of occupational health, including its key concepts, objectives, and the importance of protecting workers' health in various workplace settings.
- Identify common occupational health hazards, including physical, chemical, biological, ergonomic, and psychosocial risks, and assess their potential impact on workers' health.
- Understand the methods used in occupational health surveillance and monitoring, including the collection of health data, biomonitoring, and occupational disease tracking.
- Recognize the impact of work-related stressors on mental health and apply strategies for improving mental well-being in the workplace.
- Understand the impact of climate change on health.

COMMUNICABLE AND NONCOMMUNICABLE DISEASES

By the end of the course, the students will be able to:

- Understand the importance, awareness, and preventive strategies for CDs and NCDs.
- Design and implement evidence-based interventions to prevent and control CDs and NCDs.
- Develop and evaluate CD and NCD surveillance systems and monitoring frameworks.
- Describe the global and national impact of common communicable diseases.
- Discuss the strategies of control of common Communicable Diseases.

HEALTH SYSTEMS

By the end of the course, the students will be able to:

- Understand the various types and concepts of Health Systems.
- Understand and identify the indicators of all essential components of the Health Systems Model.
- Explain building blocks of health system with focus on UHC and DCP3.
- Understand and practice the steps of Health Systems Analysis.
- Develop and conduct tool for Health Systems Analysis.
- Analyze and interpret the findings from data collected through the Health Systems Analysis Tool.

LIST OF RECOMMENDED ELECTIVES

- Applied Health Economics
- Health Care Financing
- Supply Chain Management
- Demography and Population Dynamics
- Community Based RH Interventions
- Gender Development
- Nutrition for Children, Adolescent & Mothers
- Community Management of Malnutrition
- Human Resource Management for Health
- Health Policy, Planning and Management
- Financial Management

- Hospital Administration
- Scientific/Technical writing
- Artificial Intelligence in Public Health
- Climate Change and Health
- Global Health/ Heath Security
- Emergency and Disaster Preparedness

DEGREE AWARD REQUIREMENTS

The following minimum requirements are prescribed by the NCRC (Public Health) for award of NQF level 7 qualification in Public Health:

a) Minimum of thirty (30) credit hours including twenty-four (24) credit hours for core courses and six (6) credit hours for electives as prescribed in this policy must be completed.
b) In addition to coursework of thirty (30) credit hours, research work / thesis of minimum six (06) credit hours must also be completed individually as partial fulfilment of the degree program.
c) CGPA must not be below 2.50/4.00 at the time of completion of the degree program. The university may however set higher standard in this regard.