CURRICULUM

Master in Public Health (MSPH)

(Two Year Programme)

DEPARTMENT OF PUBLIC HEALH
SHAHEED ZULFIQAR ALI BHUTTO MEDICAL UNIVERSITY
ISLAMABAD

Table of Contents

PREFACE **1**

1. INTRODUCTION **2**

CONTEMPORARY ISSUES IN PUBLIC HEALTH WORKFORCE TRAINING 3
TEACHING AND LEARNING APPROACHES 4
EVOLUTION OF PUBLIC HEALTH FUNCTIONS AND COMPETENCIES 5
CHALLENGES IN MSPH CURRICULUM DESIGN AND REVISION 6
1.1 VISION STATEMENT 7
1.2 MISSION STATEMENT 7
1.3 DEPARTMENTAL GOAL 8
1.4 DEPARTMENTAL OBJECTIVES 9

2. GOALS AND OBJECTIVES OF THE MSPH PROGRAM **9**

2.1 GOAL OF THE MSPH PROGRAMME 9
2.2 OBJECTIVES OF THE MSPH PROGRAM 10

3. PROGRAM ORGANISATION AND STRUCTURE **10**

3.1 PROGRAM DURATION, CREDITS AND MEDIUM OF INSTRUCTION 11
3.2 TERM-WISE DISTRIBUTION: 11

4. METHOD OF ASSESSMENT/EXAMINATION **13**

ANNEX 1: DISSERTATION GUIDELINES (TERM III) **15**

DISSERTATION 15
PROPOSAL CRITIQUE AND EVALUATION GUIDELINES 23
DISSERTATION CRITIQUE AND EVALUATION GUIDELINES 26

ANNEX 2: PRACTICUM FOR TERM IV **30**

PRACTICUM (ON-THE-JOB ASSIGNMENT) 30

ANNEX 3: ADMISSION CRITERIA AND PROCEDURES **37**

INTRODUCTION: 37
APPLICATION PROCEDURES 38
ADMISSIONS PROCEDURES 39

ANNEX 4: DETAILS OF SELECTED COURSES **40**

REFERENCES **44**

PREFACE

Public Health education in the 21st Century has a tremendous potential to overall health improvement. Often advocated as a case for "seizing this moment"(Fried, 2015), this education has been promoted as the only way to reduce the theory-practice gap in Public Health that does not allow health of populations to flourish. Changing pattern of health threats and population movements coupled with financial flows and technological advances call for new educational approaches that are both globally attuned and locally sensitive(Bhutta et al., 2010). The critical importance of competent public health workforce in a well-performing health system cannot be undermined, especially because many professional training programmes have been found to be narrowly conceived, outdated, and use static curricula to produce ill-equipped graduates from under-financed institutions. Investing in health professionals' education should be viewed as an opportunity to lead health advances of the new century.

Competency-based training is viewed as one of the best ways to transform learners into Public Health Leaders with an ability to lead the change towards better population health. Competency is an ability to perform an activity to a required standard and can be linked to specific skills required by Public Health Professionals. Along with the acquired content knowledge, these essential skills enable the use of Public Health approach to solving health problems.

The Master in Public Health Programme (MSPH) offered by the Department of Public Health, Shaheed Zulfiqar Ali Bhutto Medical University emphases acquisition of skills and competencies in all major areas of Public Health. It is designed to provide students with the opportunity to acquire integrated multidisciplinary training coupled with high quality instruction, so that they can confidently take up the role of future leaders of Public Health and work proactively towards advancing population health.

This detailed document gives a detail of the Vision and Mission of the Department of Public Health, in light of the Vision and Mission of the Shaheed Zulfiqar Ali Bhutto Medical University. It also describes the goal and objectives of the Master of Public Health Programme. The Courses included in the respective terms follow. The Annexes include the details of selected the courses.

1. INTRODUCTION

Public Health has been defined as "what we as a society do collectively to assure conditions in which people can be healthy" (Koo and Miner, 2010). This broad scope requires a diverse workforce. Public Health professionals come from a variety of backgrounds, and at different stages of their careers. In most cases, Public Health is a discovered discipline, not an initial profession but a choice embraced later in one's career. Therefore, this continuously evolving field of Public Health requires training that is not confined to formal training in academic settings but also in diverse on-the-job settings so as to be of sufficient quality to elevate the learners' competence.

The goal of a university is "to make more enlightened contributions to the common good" (Huston, 2011). This makes all academic institutions socially accountable for the kind of professionals they produce. Public Health has been recognised as an endeavour that requires a high order of professionalism in addressing the health of the populations (White, 2013). This requires a distinctive investment in educational capacity designed to meet context-specific needs. As a complex and challenging field, public health encompasses diverse skill sets, attracting people who value multidisciplinary and interdisciplinary elements in their work. It is multidisciplinary because many types of professional contribute knowledge and skills from their own discipline, and interdisciplinary because practitioners must analyse, synthesise and harmonise links across disciplines into a coherent whole (White, 2013). The holistic nature of Public Health practice underscores that "Health" is a function of working conditions, living circumstances and lifestyles, and acknowledges healthcare as only one of its determinants. There is strong evidence that behaviour and environment are responsible for 70% of avoidable mortality (Century, 2003).Since a focus on integrating economic and social policies, and investing in healthy policies is deemed imperative for advancing overall health, Public Health is increasingly understood as a strategic force for a healthy population. Shaheed Zulfiqar Ali Bhutto Medical University (SZABMU) has risen to this challenge by deciding to contribute to Public Health Workforce through a Masters of Public Health (MSPH) Programme, an academic degree with a major component of public health research. The SZABMU is uniquely and ideally positioned to take on a leadership role to ensure that health is a central focus and goal in all policies and programmes, and an investment in Public Health workforce training is a step in the right direction.

Contemporary Issues in Public Health Workforce Training

It has been recommended that educational planning for Public Health professionals should be need-based and evidence-driven, focusing on development of professional competencies appropriate to local settings. It must also include a vision for everyone involved. The health prospects of all populations require this vision and related actions, as they are the ultimate beneficiaries. The collective dimension of Public Health is what sets it apart from other clinical disciplines and makes Public Health a precondition for a well-functioning society.

Health professionals' education has itself been recognised as a system that overlaps the health system it attempts to serve. Generally, the content, organisation, and delivery of this education has failed to serve the needs and interests of patients and populations, as evident in the increasingly widening gap between what the populations require and what the professionals deliver. Although the rigid and damaging tribalism that afflicts the professions today is one of the major hurdles in bridging this gap, reliable evidence from low-income and middle income countries shows that the most important barrier to achieving health is the generation and application of knowledge (Horton, 2010).

For an effective learning experience, we need to integrate what is known about how adults learn and how to apply systematic instructional and educational design methods (Koo and Miner, 2010). Ideally, Public Health workforce development should be purposeful, outcome-based, strategic, and based on contextual needs of work environment. A close partnership of academia and the practice community is required and the SZABMU being situated within the premises of PIMS offers a unique opportunity in this regard. The overall aim is to facilitate the progression of these future Public Health Professionals from entry level, to capable, competent, proficient and expert professionals.

In 2010, the Education of Health Professionals for the 21st Century Commission (an independent and global Lancet commission of 20 experts in medicine, nursing and Public Health) published a report recognising the deficiencies (both quantitative and qualitative) in health professional workforce for the 21st century, and analysing the state of education of health professionals around the world. The report was titled, "Health Professionals for a new Century; transforming education to strengthen health systems in an interdependent world". This Commission sought to advance health by recommending instructional and institutional innovations to develop a new generation of

health professionals, better equipped to address present and future health challenges, and concludes that

"*all health professionals in all countries should be educated to mobilise knowledge and to engage in critical reasoning and ethical conduct so that they are competent to participate in patient and population-centred health systems as members of locally responsive and globally connected teams*" (Frenk et al., 2010).

The role of enhancing the capacity to conduct Public Health research and putting it in practice cannot be undermined. According to a pioneering 1990 report of the International Commission for Health Research and Development, "strengthening research capacity in developing countries is one of the most powerful, cost-effective and sustainable means of advancing health and development" (Bradley, 1989). Research process is implicit with the functions that lie at the core of public health, i.e., planning, evaluation, surveillance, investigation, and problem and pathway analyses. Hence the development and application of operational research skill is fundamental to effective and efficient public health programs. Building the capacity for Public Health professional education necessitates a new level of effort, especially if public health research findings need to be translated into policies and programs (White, 2013).

Teaching and Learning Approaches

From the start of 20th century, much emphasis has been placed on science-based learning (i.e., informative learning), while problem-based learning (i.e., formative) also became popular designed to inculcate professionals with appropriate values, attitudes and behaviours. The commission called for a third level of learning called "***transformative learning***" which would imbue all health professional students with leadership skills needed to a) adapt global knowledge and core competencies to local contexts and b) to be socially accountable change agents for health systems not meeting population needs. The commission recommended a harmonisation of education and health systems; a movement from stand-alone academic institutions to consortia, alliances and networks; and an outward vision to harness the best knowledge and practices from around the world (Frenk et al., 2010). These recommendations have been taken into account while designing the MSPH curriculum and incorporated into the goals of the Public Health Department at SZABMU.

Evolution of Public Health Functions and Competencies

Competence involves an integrated approach of knowledge, abilities, skills and attitudes displayed in the context of a carefully chosen set of realistic professional tasks which are of an appropriate level of generality(Hager and Gonczi, 1996). The quest for core competencies and functions of Public Health goes back to the 1997, when the World Health Organisation (WHO) developed 37 core Public Health functions (Houghton et al., 2002). In the United States, consensus has been reached on the core set of Public Health Competencies for Public Health Workforce development, recently revised in 2014. These competencies are a product of ten years of effort by the Council on Linkages between Academia and Public Health Practice and are under constant revision (Fleming et al., 2009). The core and elective courses being offered in the MSPH Program at SZABMU are designed to be in line with these competencies.

These include

- analytic/assessment skills
- policy development/program planning skills,
- communication skills,
- cultural competency,
- community dimensions of practice skills,
- basic public health sciences skills,
- financial planning and management skills and
- leadership and systems thinking skills

In the United Kingdom, the Faculty of Public Health identifies the curriculum areas outlining the competencies or learning outcomes that trainees in public health need to attain in order to complete their training. These nine key areas relate to the three domains of public health practice(health protection, health improvement and service quality).These key areas include "surveillance and assessment of the population's health and wellbeing; assessing the evidence of effectiveness of health and healthcare interventions, programmes and services; policy and strategy development and implementation; strategic leadership and collaborative working for health; health intelligence and academic public health"(Fleming et al., 2009).

Challenges in MSPH Curriculum Design and Revision

Designing the curriculum for postgraduate Public Health education poses a challenge for many reasons. Firstly, the lack of an agreed definition of public health practice and resulting knowledge and proficiencies required makes designing a curriculum difficult. Secondly, both know that (knowledge), and know-how (skills) is required in generic Public Health issues as well as knowledge related to practical wisdom in specific areas which requires broadening the horizons (Gonczi, 2013). As humans are a product of their past and current environments, experiential learning brings value to adult learning processes and helps decision-making that is relevant to the context. Linking competencies with Course Content is essential as is linking international competencies within the local context (Karkee, 2014, Sharma et al., 2013). Multiple stakeholders include learners as well as their future employers, who should be taken on board while developing the Public Health Curricula for various degree programmes.

Revisions in the approved MSPH curriculum include renaming the course as two-year Masters of Public Health (MSPH) equivalent to an MPhil Degree. A few contemporary issues have been included in core courses while some of the existing core courses have been renamed, revamped or relocated across semesters to increase coherence and flow of knowledge exchange. Furthermore, the credit hours for individual courses have also been revised so that they reflect the content and focus of the relevant course.

Leadership (facilitating others to reach a common goal) and innovation (creativity with a purpose) are both essential components of Public Health Practice (Begg et al., 2014). For this reason, a Healthcare leadership course based on the NHS Healthcare Leadership Model (Ellis and Abbott, 2014) has been added as a core course. It delineates nine dimensions of leadership behaviour, each having four stages from essential, proficient, strong to exemplary levels. The course also draws upon public health leadership competency framework (Czabanowska et al., 2013). Furthermore, contemporary courses on Global Health and Human Resources in Health are also being designed to be offered as core courses in the third term.

The Master of Public Health (MSPH) offered by Department of Public Health, Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad, is planned as a twenty four months post-graduate academic and research degree program.

1.1 Vision Statement

The vision of Department of Public Health is realised through the vision of Shaheed Zulfiqar Ali Bhutto Medical University which is a premier research-focused Medical University imparting accredited education and training in various health-related fields including medicine, dentistry, nursing and allied disciplines, at graduate and doctoral levels in accordance with international professional standards. The Department of Public Health within SZABMU envisages becoming a centre of excellence in public health academics and research.

1.2 Mission Statement

The SZABMU was formulated in March, 2013 through an act of Parliament, with the following Mission,

1. To prepare clinicians in practice patient-centered practice of medicine/dentistry of the highest quality; and *to identify and answer fundamental questions with regard to prevention and treatment of diseases, in health care delivery and in the basic sciences, thereby to improve health through leadership, discovery and innovation patient care, education and research.*
2. To advance national health through teaching, research and services, foster innovation, to build and bring about fresh, creative solutions that address the health needs of the Pakistan society.
3. To attract the best and brightest minds and train them as future national and international leaders, and in setting standards of excellence among faculty, staff and to recruit, retain, nurture and promote those who represent the best in the country
4. To advance the academic and professional ranks of the very best faculty and staff through mentoring, training and strategic management of career transitions, building upon a diverse community of scientists, clinicians, administrators, staff, trainees and students together with monitoring, transparency and accountability.
5. To create and provide laboratory infrastructure equipped with FISH (Florescent In Situ Hybridization) and next generation sequencing, DNA Typing, PCR analysis and protein purification processes, for advanced research in genetic and infectious diseases, stem cells and regenerative medicine, gene cloning and translation of laboratory research into products and processes of direct relevance to National health

6. To come up with high impact factor journals
7. To improve CSR

The mission of the Department of Public Health, SZABMU, Islamabad, is to contribute in improving population health by conducting trainings and research for evidence-based public health policy and practice.

1.3 Departmental goal

The Public Health Department is committed to provide quality education in public health and undertake research to advance evidence-based public health policy and practice in Pakistan, by creating a culture of lifelong learning to improve the health of population.

1. The Department aspires to offer high quality teaching to train competent Public Health Professionals with appropriate knowledge and competencies. Such expertise would enable these Professionals to play a leadership role as agents of change for identifying and solving complex Public Health problems in the Pakistani context.

2. Research by the Department of Public Health would strive to transform attitudes at individual, community and policy levels, and provide impetus to future public health programs.

3. The Department also plans to engage in strategic collaborations and knowledge-sharing activities with other Public Health Institutions in Pakistan and abroad so that the scope of Public Health Workforce development can be broadened and interdisciplinary training and research can be facilitated.

Ensuring a multipronged approach towards strengthening the health systems, the Department will extend all efforts and work proactively to build sustainable partnerships with relevant stakeholders. The resulting communities of practice will ensure that trained workforce and translational research in Public Health are utilised to the best of their advantage to elevate the health status of the nation.

1.4 Departmental Objectives

The objectives of the department are to

1. Produce a workforce of competent public health professionals proficient in public health practice.
2. Enhance the skills and competencies of public health professionals through use of transformative learning processes
3. To conduct multidisciplinary applied health research in diverse settings for evidence-based public health policy and practice.
4. To create opportunities for engagement in applied research for disease prevention and control in hospital and community settings
5. To train and mentor public health leaders equipped with systems thinking in public health practice.
6. Develop project proposal, implement and evaluate public health programs to address emerging public health challenges in collaboration with national and international partners.
7. To link knowledge production with advocacy and disseminate information regarding best practices on issues of public health importance

The departmental objectives will be guided by core values of merit, integrity, critical thinking, professional ethics, collaborative engagement, integration and excellence in teaching and research.

2. Goals and Objectives of the MSPH Program

2.1 Goal of the MSPH Programme

The MSPH programme aims to enhance skills of public health professionals through an accredited, high quality post graduate academic and research program to enable them to address key public health challenges in order to improve population health.

2.2 Objectives of the MSPH Program

The graduates of the MSPH Programme are prepared to:

1. Solve health-related problems within the financial, socio-cultural, environmental and political frame work of Pakistan and its surrounding region.
2. Design, conduct, analyse and interpret the results of relevant studies, projects and programs.
3. Plan, manage, monitor and evaluate interventions in the field of public health.
4. Communicate public health messages to diverse audience effectively.
5. Advocate sound public health policies and practices.

The Master of Public Health program at Department of Public Health (SZABMU) will provide experienced professionals with a thorough grounding in population-based approaches for health sector problem identification, investigation, analysis and response management.

3. Program Organisation and Structure

The intensive curriculum of MSPH in basic public health sciences includes but is not limited to essential managerial and analytical skills including project planning and evaluation, epidemiological investigations, health systems analysis and research, reproductive and child health, environmental and occupational health, disease control and effective communication and leadership. It adopts a discipline-based methodology based on core competencies.

The 24-month curriculum is organised around a guiding framework, which first provides students with a conceptual overview of the diverse profession of public health and team-oriented approach to professional practice as well as a 6-month practicum (hands-on-training).

The courses are taught in a concurrent and integrated manner, intended to build upon existing knowledge and correlate with the Pakistani context. The **first term**

curriculum provides exposure to the basics of public health disciplines. The **second term curriculum** provides advanced applied training in key methodological and programmatic disciplines which continues into the third term allowing for interest-based electives and a supervised dissertation. The dissertation integrates public health knowledge, skills, and methods in a professionally and individually relevant practice context. Elective courses are offered conditionally during the **third term, only if** a minimum of six participants enrol for a course. New credited courses will be subsequently introduced on a need-and-demand basis in the coming years.

Students are encouraged to be well-prepared for involvement in institutional research in the field, in their area of interest. This will provide an opportunity for supervised, mentored practical experiences while addressing the health needs in Pakistani context.

In the **fourth term,** the students proceed to their respective workplaces/attachments and apply the skills that they learnt in the first three terms. The immediate supervisor's/mentor's appraisal at the end of the session is submitted to the Registrar.

3.1 Program Duration, Credits and Medium of Instruction

The total programme consists of 36 credits. One credit is equivalent to 16 hours of formal teaching/contact hours or 45 hours of practical fieldwork. Practical fieldwork is defined as consisting of individual fieldwork, group fieldwork, field visits, individual assignments and class exercises.

English is the medium of instruction and examination for the MSPH program.

3.2 Term-wise Distribution:

The distribution of the core and elective courses in the three sessions is given in the following tables.

Year I Term I: Core Courses (Credits 12)

COURSE CODE	COURSES	CREDITS
MSPH-601.	Introduction to Public Health	1

MSPH-602.	Epidemiology-Basic	2
MSPH-603.	Biostatistics-Basic	2
MSPH-604.	Population Dynamics	1
MSPH-605.	Informatics in Public Health	1
MSPH-606.	Qualitative Research Practice	2
MSPH-607.	Research design	1
MSPH-608.	Health, Illness and Society (Medical Anthropology)	1
MSPH-609.	Environmental and Occupational Health	1
Total Credits		12

Term II: Core Courses (Credits 12)

COURSE CODE	COURSES	CREDITS
MSPH-610.	Health Systems Analysis	2
MSPH-611.	Reproductive Health	1
MSPH-612.	Health Planning	2
MSPH-613.	Communicable and Non-Communicable Disease Control	2
MSPH-614.	Health Promotion	2
MSPH-615.	Health Systems Management	1
MSPH-616.	Research Design 2	1
MSPH-617.	Child Health	1
Total Credits		**12**

Term III: Core and Elective* Courses (Credits 10)

COURSE CODE	COURSES	CREDITS
MSPH-618.	Health Care Financing	1

MSPH-619.	Applied Nutrition	
MSPH-620.	Hospital Management	1
MSPH-621.	Advanced Epidemiology & Biostatistics	
MSPH-622.	Community-based Reproductive Health Interventions	1
MSPH-623.	Health Policy	
MSPH-624.	Research Design 3	1
MSPH-625.	Global Health	0
MSPH-626.	Leadership in Public Health	0
MSPH-627.	Proposal and Dissertation writing	6
Total Credits		**10**

* Three elective courses need to be taken.

Term IV: Practicum (Credits 2)

COURSE CODE	COURSE	CREDITS
MSPH-628.	Practicum and Report writing	**2**

Each Term/Semester is of 22 weeks duration with an intervening 2 weeks break. The teaching hours per session differ as the division of time for lectures and practical work for different courses varies.

4. Method of Assessment/Examination

The students are evaluated during each course on the basis of:

1. **Formative assessment**: This is a mix of tests, end of course examinations, class and home assignments, class participation, interactive discussions, practical exercises and/or group works depending on the course outline (ongoing assessment).

2. **Summative assessment** based on the end of the term examination papers. Summative assessments are held at the end of each of the first three terms.

Dissertation work is assessed through submitted dissertation as well as a viva voce examination on the basis of a structured format covering the quality of the project; work performed in the field; data generation, analysis and presentation of results; and discussion and conclusions presented as a written report.

In the fourth term, the students either go back to their work places or take an attachment with a national program agency etc. and apply the skills learnt in the first three sessions. At the end of the session an on-job written report will be submitted by the students in addition to the written appraisal by the designated supervisor/mentor. A joint agreement has to be made with the supervisor/mentor and the faculty advisors prior to the beginning for the fourth term. This will be finally assessed by the senior faculty of Department of Public Health.

Twenty percent marks shall be reserved for the ongoing (formative) assessment and **eighty percent** for the final examination paper and dissertation (summative assessment).

Candidates obtaining less than 50% in any of the examinations will be deemed to have failed in that paper/session of the MSPH. A student failing in a paper (when scores of session examination and ongoing assessment are less than 50%), will be allowed to clear that paper in the supplementary examination to be held within 3 months of the declaration of the result of the session. However, a student accumulating more than two failures at any stage shall cease to be a student of the University.

Candidates passing all the session examinations shall be declared to have passed the MSPH programme and shall be awarded the degree.

The final evaluation of the students will be as per the existing university regulations. The minimum passing marks in each of the subjects will be 50%; however the overall cumulative minimum marks required for passing the MSPH Programme will be 60%.

Annex 1: Dissertation Guidelines (Term III)

Dissertation

Course Title: Dissertation

Course Credit: 6

Introduction:

The exposure to community-based and health systems research is an essential element that the current MSPH program aspires to include in the curriculum. This helps in the conceptualisation of this research experience and converting it into a scientific write-up to complete the requirements for the MSPH program.

The document serves to assist students in understanding the selection of the topics for research, write the proposal for approval by Institutional Review Board (IRB) and the funding agencies. Dissertation writing is required from each student of MSPH to generate a meaningful academic product that demonstrates the student's application of crucial knowledge and skills including:

- Aspects of relevant disciplines like epidemiology, biostatistics, qualitative research methods etc.
- Conceptual framework for the working hypothesis or research question.
- Research objectives, hypothesis and research questions formulation in measurable terms.
- Study design, study population and selection processes correctly according to the objectives.
- Interpretation and analysis of data in support of a decision or conclusion.
- Correctly written bibliography.
- Oral and written communication and presentation of the product.
- Development of and adherence to a schedule/time frame.
- Formulation of a realistic budget and its defence.

Every student is required to show substantial work done under the supervision of the academic advisor.

The following sections provide detailed guidelines for dissertation writing.

1. Dissertation:

The dissertation requires the generation of new applied knowledge through the comprehensive application of the research process. The thesis option is a better choice for students who desire to gain confidence in their ability to plan, conduct, and write a research work and wish to gain confidence in their ability to critically apply existing knowledge and methods to the solution of a problem in public health.

Given the inherent complexity of activities and time demands, 6 credit hours of research are allocated for a dissertation.
The topic for research will be chosen in consultation with the academic advisor.

2. Overview:

By completing their dissertations MSPH students are able to demonstrate their understanding of core competencies through the successful application of core knowledge and principles, critical thinking and analytic reasoning skills.

The student is advised to select a topic for research consistent with his/her professional requirements during the first and second session. In the beginning of third session, the student will be guided to complete the research tools and complete the proposal in light of the training during the class work.

Students are advised to plan ahead for each step. The proposal formulated has to be critically appraised by the Academic Council of the and simultaneously the Institutional Research Board (IRB) within 3 weeks of the third session which is before the student is allowed to start with the data collection. The committee can suggest changes which will be communicated to the student at the time of critical appraisal.

The students will carry out data collection, data analysis, interpretation and presentation of the results leading to conclusions from the study under the dissertation writing guidelines during the third session (see below).

The Examiners (one internal and one external) for the viva voce examination will be approved by the University's Controller of Examinations. This process has to be

started at least 6 weeks before the exams are scheduled. The examiners should be provided the written dissertation at least 15 days in advance of the scheduled defence.

It is the University's responsibility to identify the examiners, coordinate a time that is acceptable to all members; to arrange for any needed audio-visual support, and to ensure that the examiners are notified of the location of the defence.

3. Proposal Format:

Proposal for the Dissertation: The proposal submitted for a dissertation should follow the outline listed below. The outline corresponds to the major chapters expected in a thesis. Deviations from the content in this outline should be discussed and approved by the advisor (and committee in advance of submitting the proposal for the defence).

3.1 Introduction

(a) Establish importance of topic

(b) Conceptual model/relationship of independent and dependent variables

(c) Summary of what is/is not known

(d) What gap the study is filling

(e) Statement of research purpose(s)

3.2 Aims and Objectives/Hypotheses or research questions including operational definitions

3.3 Material and Methods

(a) Study design

(b) Duration of study

(c) Study population

- Sampling methods
- Sample size/power
- Sample recruitment: Inclusion and Exclusion criteria

(d) Data Collection Procedure: Identify the recruitment of the population to the collection of :

- Variables
- Measurements

i. instruments (include copies of relevant instruments (surveys, etc) as appendices)

ii. standards

iii. reliability

iv. validity

(e) Data analysis plan (including software to be used and tables if applicable)

3.4 Rationale of the study

3.5 Human Subject Protection*

i. Informed Consent Procedures

ii. Confidentiality

iii. Risks

iv. Benefits

v. Permission to access data (if applicable)

*should also attach an approval by the IRB.

3.6 References listing

Reference listing is to be done at the end of the proposal. (The references should consist of at least 6 references from not older than last 5 year; preferably from the published articles and only occasionally from the books).

3.7Timeline

A timeline should be attached as an annexure.

3.8Proposed budget

A proposed budget should be given at the end of the proposal.

4. Outlines for the Dissertation:

Part I: Consisting of:

(a) Title page with the name of the student and the programme they are working under, i.e. name and MSPH with year.

(b) Declaration duly signed by the Advisors/Supervisors

(c) Acknowledgements

(d) Table of Contents

(e) List of Tables/Figures with page numbers

(f) List of Abbreviations used

All pages are to be given Roman numerals before the summary.

Summary

A structured summary should be the first part of the dissertation write up. Introduction, Objectives, material and methods: Study design, duration, sample population including sampling techniques, sample size and sample selection and statistical analysis. Brief results and conclusions. Key words: 3-5 words best describing the study.

Part II

4.1 Introduction

It shall cover:

(a) Establish importance of topic

(b) Conceptual model/relationship of independent and dependent variables

(c) Summary of what is/is not known

(d) What gap the study is filling

(e) Statement of research purpose(s)

4.2Literature Review

It shall cover:

(a) General overview

(b) Theoretical models/conceptual frameworks

(c) Relationships among variables

(d) Other relevant literature

4.3a. Aims

4.3b. Objectives (or research questions)

4.4Material and Methods

(a) Study design

(b) Duration of study

(c) Conceptual models/conceptual frameworks

(d) Study population

i. Sampling techniques

ii. Sample size/power

iii. Sample recruitment: Inclusion and Exclusion criteria

4.5 Data Collection Procedure*

Identify the recruitment of the population to the collection of:

i. Variables: how measured

ii. Measurements: how performed?

iii. instruments*: questionnaires etc.

iv. reliability

v. validity

*include copies of relevant instruments (surveys, etc.) as appendices.

4.6 Data analysis plan

How was the data analysed? Procedures for statistical application and statistical software/s used should be outlined in sufficient details

4.7 Ethical Considerations

Consent form must be attached as an Annexure. Ethical clearance from the Ethical Review Committee of the University should be attached. Informed Consent Procedures and Consent Form should also be approved.

4.8 Results

This chapter includes presentation of results as tables, figures etc. based on the statistical applications and not as computer outputs. The results should be described in adequate details indicating the major findings. The results should be in line with the objectives of the study. The results should be on separate pages; one table/figure on one page. Same tables cannot be replicated as figures.

4.9 Discussion

In this chapter a detailed discussion of the results and comparisons with other study reaching to a conclusion in accordance will be made.

4.10 Conclusions

The conclusions should be in line with the objectives and the results.

4.11References

The reference list consists of published articles not older than 5 years unless required for the work. References from books are not the preferred method. The number of references should not be less than 30. Vancouver style is the recommended method of referencing.

The pages should be numbered from (Introduction to references) in **Arabic numerals**.

5. Defence Process:

The defence begins with administrative/introductory remarks by the Chair who will review the process and procedures for the defence, including any ground rules set

forth for the specific defence with the internal and external examiners. The student will then make a prepared 10-15 minute (proposal) or 20-25 minute (dissertation) presentation which summarizes the proposal/dissertation.

The Chair will announce in advance whether questions may be asked during the presentation or held to the end. Normally, clarifying questions will be permitted during the presentation with probing/analytic questions following the presentation.

Following the formal presentation and clarifying questions, questioning/critiquing by the Examiners then begins. For the proposal defence, emphasis is on the suitability of the proposed research/project and the design/methods/analytic plan/approach. For the final defence, emphasis is on the results, lessons learned, and implications.

In both cases, questions related to application of core competencies may be asked, even if they are per or in relation to the proposal/dissertation under review. The session concludes when the examiners have finished questioning or the allotted time has elapsed. Fifteen minutes at the end of the session are reserved for the Examiners' deliberations and finalizing of their results. The student may be excused from the room while the Examiners deliberate. The students will be informed of the formal results after approved by the University, Controller of Examinations.

6. Presentation Evaluation:

Effective presentation and oral communication skills are core competencies expected of MSPH graduates. Consequently, separate from the content assessment of the proposal/dissertation, the Examiners will evaluate the student's presentation skills. During the proposal defence, the assessment will be used to advise the student of perceived strengths and weaknesses and recommended actions to ensure a strong presentation during the final defence (diagnostic). For the dissertation defence, the examiners will formally assess the student's presentation/oral communication skills (evaluative). Successful mastery of the communication skills is a requisite for passing the defence.

7. Outcomes:

There are 3 possible outcomes for a defence (be it proposal, thesis, or project): unconditional pass, and conditional pass, and fail.

- **Unconditional Pass** is associated with consensus scores of 3 or more in all areas. It may, however, include requests for minor revisions which are reviewed and accepted by the advisor on behalf of the Committee.
- **Conditional Pass (Result Later On)** is associated with a score of 2 or less in one or more areas where the shortcomings may range from being technical in nature, easily corrected, and/or for which the student demonstrates understanding during the defense to more substantive issues ranging from general weakness to a critical weakness in a specific area. The student works with the advisor to correct the deficiencies identified by the examiners. The revisions will be accepted by the examiners and notified to the University.
- **Fail** is associated with poor performance and evidence of gaps in knowledge and critical reasoning skills during the defence. The deficiencies are such that the Examiners wish to see a re-defence of the revised dissertation/proposal. (Students are permitted only one re-defence of the Dissertation. Students work with their advisor and committee to correct any deficiencies in the proposal/manuscript and other areas as needed prior to scheduling a re-defence. The date of re-defence will be notified in one month's time to the student.

Proposal Critique and Evaluation Guidelines

The Proposal manuscript (synopsis) is evaluated to ensure it adequately demonstrates core competencies and the correct application of a specific set of competencies to the research of a public health problem.

1. Demonstration of Core Competencies: Evaluation Guidelines

The primary educational objective of the dissertation is to demonstrate appropriate consideration and application of core concepts, skills, and knowledge in analysing a public health problem within any of the proscribed frameworks. The core area competencies must be addressed in each project.

These competency areas cut across the domains identified for each specific framework. For example, quantitative competence may be demonstrated in the literature review and/or methodology section and/or results and/or discussion section of a publication framework. All papers are required to demonstrate minimum competence, but are held accountable to a level of competence consistent with the problem and framework as defined by the student. An example of this is when a student refers to an advanced statistical analysis in his/her design. Although the statistical test may exceed the competence expected of a graduate, by virtue of having introduced it, that student is accountable to correctly describe and apply it.

1. **History:** Appropriate and sufficiently thorough consideration of relevant historical information surrounding the problem ranging from trend information to assessments of previous efforts and related research

2. **Quantitative Sciences (assessment/analysis):**Appropriate and sufficiently thorough consideration of epidemiology, demography, vital statistics, and biostatistics (analytical planning, sample size, etc.)

3. **Biological considerations (determinants):** Appropriate and sufficiently thorough consideration of biologic concepts (genetics, physiology, immune response, life cycles, processes such as aging, growth, and development, and physiologic measurements)

4. **Social/cultural/behavioural considerations (determinants):** Appropriate and sufficiently thorough consideration of socio-cultural and behavioural factors which directly or indirectly impact on the problem under consideration

5. **Environmental and/or occupational considerations (determinants/impacts):** Appropriate and sufficiently thorough consideration of the role and interaction of the physical environment – which can include both the physical and natural environment.

6. **Management and/or policy and/or resource utilization considerations:** Appropriate and sufficiently thorough consideration of management precepts

ranging from the domains of administration to leadership to financial planning (budgeting) to policy setting to implementation and planning (logistics).

2. Dissertation Competency: Evaluation Guidelines

The following are some guidelines for evaluating dissertations.

1. **Importance of the problem to public health**
- Has the magnitude of the problem been characterized?
- Is a case made for its importance?

2. **Organization/ Presentation**
- Easy to read/understand
- Quality of tables and figures
- Logical progression of ideas
- Conformity with guidelines of target publication/standard format

3. **Abstract appropriately structured and an adequate reflection of paper's content**
4. **Introduction places the current study in the context of current knowledge**
- Quality/thoroughness of literature review
- Demonstrates where this project fits in

5. **Design appropriate to answer the question**
- Consideration given to options
- Rationale given for choosing design
- Strengths and limitations inherent in design discussed (validity)
- Strengths and weaknesses of measurements (reliability)

6. **Population appropriate to answer the research question**
- Considerations/advantages/disadvantages of choice

7. **Analysis appropriate to answer the question**
- Methods described; limitations noted
- Plan sufficient to address research question
- Level of data collection/coding sufficient
- Confounding/interaction/bias/design limitations accounted for
- Issues of power sample size addressed

8. **Plausibility of results appropriately addressed**
9. **Public health implications appropriately addressed**

10. **References complete and adequately reflecting current literature on the topic; peer-reviewed sources provide adequate support for assumptions or background information.**
11. **Overall scientific merit**

- Is the study design appropriate to the stated objectives?
- Is the appropriate level of data used?
- Has an appropriate literature review been included?
- Does the project increase our understanding or to replicate inconclusive/controversial findings?

Dissertation Critique and Evaluation Guidelines

1. Executive Summary

Briefly summarizes problem, magnitude, key determinants, recommended course of action

2. Statement of Problem

- Was the problem clearly identified and defined?
- Is it an appropriate/relevant public health problem?
- Is the group/organization/agency selected to hear the argument appropriate?

3. Magnitude of the problem

- Is the magnitude of the problem clearly identified?
- Are the strengths and limitations of the measures/estimates discussed?
- Does the paper make a compelling case that the problem is significant enough to warrant attention?

4. Key Determinants

Are the appropriate biological, behavioural, and environmental determinants of the problem addressed?

5. Prevention/Intervention Strategies

- Are current efforts summarized?
- Is sufficient breadth of options/strategies considered?
- Do the options follow from the key determinants discussed?

6. Policy & Priority Setting

- Are the relative advantages and disadvantages of each option/strategy considered?
- Are the benefits/risks compared at individual, community, and societal levels?
- Are political, economic, and technical feasibility considered?

7. Recommendations

Are the recommendations consistent with the analysis of the problem?

8. Implementation and Practice

- Are the likely barriers to implementation addressed?
- Are logistical/technical/resource concerns addressed?

9. Evaluation

- Is the impact of the proposed intervention measurable?
- Is success defined?
- Are provisions made for evaluating the impact of the recommended course of action?

10. Overall Impression

Is a compelling argument made that would convince you to adopt the recommended strategy? Is the argument presented succinctly and effectively?

ORAL PRESENTATION CRITIQUE SCORE SHEET

Student Name: _____ **Date:** _____

Grade (4=exceptional; 3=fully met; 2=partially met; 1=not met/missing):

Area	**Grade**
1. Content	
• Was the target audience identified?	
• Was the appropriate content presented?	
• Was the issue clearly identified and defined?	
• Was the presentation appropriate to the target audience?	
• Was sufficient supporting detail provided?	
• Were the recommendations/assertions supported	
2. Organization	
• Was the content organized and presented in a coherent manner?	
• Were new or unfamiliar terms explained?	
• Did the presentation of ideas flow smoothly?	
3. Style	
• Did the speaker(s) hold your interest?	
• Was the speaker convincing/effective?	
• Was the speakers' voice loud enough? understandable?	
• Did the speaker make eye contact with the audience?	
4. Audio-visuals	
• Were visuals (graphics, transparencies/slides) used effectively?	
• Was the quality of the slides appropriate (readable, not cluttered)?	
• Was an appropriate number of visual aids used?	
• Were visuals clearly explained?	
• Did the visuals add to the presentation?	
5. Time Utilization	
• Was time appropriately allocated to parts of the presentation?	
• Were the time constraints followed?	
• Did it appear that the presentation had been rehearsed?	
6. Questioning	
• Were questions addressed with confidence and knowledge?	

- Did the speaker interact with the audience? | |

7. Overall Impression

- Was the target audience identified? | |
- Was the appropriate content presented? | |
- Was the issue clearly identified and defined? | |
- Was the presentation appropriate to the target audience? | |
- Was sufficient supporting detail provided? | |
- Were the recommendations/assertions supported? | |

Result: ☐ Unconditional Pass ☐ Conditional Pass

Comments/specific instructions:

_____

_____

_____

Signature of evaluator: _____

Annex 2: Practicum for Term IV

Practicum (On-the-job Assignment)

Course Title: Practicum (On-the-job Assignment)

Course Credit: 2

Introduction:

Public health focuses on monitoring, achieving and improving the health of a population and is practiced in a variety of settings. The public health professional applies knowledge and skill from the core content areas of public health (biostatistics, epidemiology, environmental health, health services management, and social and behavioural sciences) to design, manage and evaluate solutions to public health problems. Using the practicum (on-the-job assignment) as the "organisational laboratory," the Master of Public Health (MSPH) student begins to develop the necessary skill sets for becoming a successful public health professional. The practicum is intended to develop direct understanding and experience in public health or health promotion organizations, thereby exposing the student to organizational cultures, management systems, operations and resources, programs and services and target populations. Such knowledge, skills, abilities, and experiences will continue to develop and grow as each student graduates and becomes a life-long learner and practitioner of public health.

Learning Goal:

The goal of the practicum is to provide a structured and supervised opportunity for the student to apply the theories, principles, knowledge and skills of public health and health promotion, as learned in the classroom, in a practice setting. The practice experience occurs in a carefully-selected health services organization approved by the MSPH Program Coordinator and is supervised by faculty and an immediate supervisor/mentor. This takes into account the transition from education to professional practice.

Learning Objectives:

The objectives of the practicum (on-the-job assignment) are to:

- Provide a practice setting for the student's application and integration of the core public health knowledge.

- Prepare the student with inter-disciplinary skills and competencies, including leadership, communication, professionalism, cultural proficiency, program planning and assessment and systems thinking.

  Upon successful completion of this course, each student will be able to:

  Leadership

- Create and communicate mutually-established project goals and objectives.

  Communication

- Demonstrate the ability to give, solicit, and receive oral and written information.
- Prepare relevant, integrated, and comprehensive written project report(s).
- Use various communication methods and media to complete project activities.

  Professionalism and Cultural Proficiency

- Demonstrate the ability to manage time and prioritize workload.
- Display professionalism, sensitivity, and tact in an organizational/community setting.
- Interact productively with supervisors, colleagues, and community stakeholders.

  Program Planning and Assessment

- Plan, manage, and monitor a project plan in order to meet established goals and deadlines.
- Prepare a written proposal for project approval from internal and external sources.
- Identify, collect, and analyse data for a practical public health issue or concern.

  Systems Thinking

- Assess the roles and responsibilities within a public health organization.
- Describe the interactions and inter-dependencies among various public health organizations.
- Demonstrate and integrate knowledge of core public health concepts into a practice setting.
- Evaluate methods of instruction and learning.

  Prerequisites and Requirements:

- Students must have completed all the course work and defended the dissertation before registering for the practicum.
- In consultation with the practice site or organization, the student must develop a short, formal proposal of the work or project to be accomplished by the student during the assignment.
- The student will complete public health practicum experience with the selected organization.

- The student will write a well-constructed report (10 – 15 pages, excluding appendices) detailing their experience, referencing and integrating core public health knowledge.
- The student will be evaluated by an immediate supervisor/mentor of the participating organization.

Role of Immediate Supervisor/Mentor

- The immediate Supervisor/Mentor is responsible for the student's learning during the practicum.
- The immediate Supervisor/Mentor serves as a role model for the student and advises the student routinely.
- The immediate Supervisor/Mentor periodically consults with responsible faculty on the student's progress.
- The immediate Supervisor/Mentor completes a student evaluation form at the end of the practicum.

Role of MSPH Program Coordinator

The MSPH Program Coordinator serves as the liaison between the student, the immediate supervisor/Mentor, and the University. He/she assists in the selection of participating organisations and maintains communication with the student and immediate Supervisor/Mentor throughout the practicum. The MSPH Program Coordinator determines the completeness of assignments and assigns the course grade.

Course Evaluation

The course is graded on a Pass/Fail basis; the final grade will be determined by the MSPH Program Coordinator and will be based on each student's performance on the following criteria:

Evaluation Criteria	Relative Weight
Immediate supervisor/Mentor/ Mentor Evaluation	40%
Student Executive Summary and Internship Report	60%

To demonstrate application of public health knowledge and skills, summarize accomplishment of established goals and assure accountability during the field

experience.Each student intern is required to prepare and submit a report based on the following format.

PRACTICUM (ON-THE-JOB ASSIGNMENT) REPORT

TITLE PAGE

EXECUTIVE SUMMARY

Concisely describes the practicum and the salient results and conclusions.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Problem or Issue (Statement of the public health problem(s) or issue(s))

1.2 Objectives (Learning/outcome Objectives)

1.3 Literature review/background (Review of the relevant literature (if any), organizational context)

2.0 METHODS

2.1 Setting (Description of the site at which you did the practicum)

2.2 Oversight (The role(s) of your immediate Supervisor/Mentor(s))

2.3 Methods (methods used to achieve each project objective in 1.2)

2.4 Timeline (outline of key project activities/dates)

3.0 RESULTS

4.0 DISCUSSION AND CONCLUSIONS

(Feel free to add any other relevant items or issues in any section of your report.)

IMMEDIATE SUPERVISOR/MENTOR EVALUATION OF STUDENT

MASTER OF SCIENCE IN PUBLIC HEALTH PROGRAM PRACTICUM (ON-THE-JOB ASSIGNMENT) EVALUATION BY IMMEDIATE SUPERVISOR/MENTOR

Thank you for your sponsorship of this student. Please complete this evaluation form. The information will be useful in preparing this student for future work and help us develop the MSPH Program further.

STUDENT'S NAME: _____

IMMEDIATE SUPERVISOR'S/ MENTOR'S NAME: _____

TITLE: _____

DATE: _____

ORGANIZATION: _____

Using the rating scale below, please circle the student's level of performance during the practicum on the criteria listed below:

1 = Exceeded expected performance level

2 = Met expected performance level

3 = Failed to meet the expected performance level

NA = Not applicable

CRITERIA	RATING			
Student met agreed-upon time commitment.	**1**	**2**	**3**	**NA**
Student was dependable and responsible in carrying out assignments and duties.	**1**	**2**	**3**	**NA**
Student functioned well within the organization.	**1**	**2**	**3**	**NA**
Student functioned well with community stakeholders and/or clients.	**1**	**2**	**3**	**NA**
Student was able to identify sources of data and information required for the practicum.	**1**	**2**	**3**	**NA**
Student was able to analyse and/or synthesize data	**1**	**2**	**3**	**NA**

and information.				
Student completed the necessary background research.	**1**	**2**	**3**	**NA**
Student completed assignments/projects in the agreed-upon time frame.	**1**	**2**	**3**	**NA**

CRITERIA	**RATING**			
Student's written work was completed and well prepared.	**1**	**2**	**3**	**NA**
Student had the necessary knowledge and skills for this practicum.	**1**	**2**	**3**	**NA**
Student conducted him/herself in a professional manner.	**1**	**2**	**3**	**NA**
Student worked well with others.	**1**	**2**	**3**	**NA**

COMMENTS

Please provide comments on the following items.

1. Any of the previous criteria on which the student was rated as 3 (Failed to meet expected performance level):

2. Your overall impression of the student's work on this practicum.

3. Any areas where the student's academic preparation for assigned work could be improved.

4. How useful the practicum was for your organization.

5. Would you be willing to sponsor another student of the MSPH Program?

IMMEDIATE SUPERVISOR'S/MENTOR'S SIGNATURE: _____

DATE: _____

Annex 3: Admission Criteria and Procedures

Introduction:

- The University abides by its strict merit-based criteria with absolute transparency to select its students for the MSPH program. Every year, 12 students will be taken up in a MSPH class based on merit
- GAT 50% Scores is a mandatory prerequisite (University Exam)

The candidate should possess one of the following qualifications or an equivalent degree from a recognized university or accrediting body.

(a) MBBS (Bachelor of Medicine & Bachelor of Surgery)

(b) BDS (Bachelor of Dental Surgery)

(c) M Pharmacy (Masters in Pharmacy)

(d) BSc Nursing (Bachelor of Sciences in Nursing)

(e) DVM (Doctor of Veterinary Medicine)

(f) Master's Degree in a subject such as Anthropology, Business Administration, Economics, Human Nutrition, Microbiology, Physiology, Psychology, Public Health Engineering, Sociology, Statistics/Biostatistics and Zoology is not being considered currently, since HEC requirement is of 60 credit programme for these type of candidates (notification of HEC dated 15th July, 2021).

- **Experience**

The candidate should preferably have three years of full-time work experience (in the case of medical doctors, after the house job) in public health-related fields in either the private sector or the public sector, including the armed forces, such as:

(a) Primary health care settings (public, private or semi-private);

(b) Recognized training and research institutions, such as departments of community medicine/school of nursing/public;

(c) Public health related vertical programs/planning/management and policy positions at the federal and provincial level.

- **Age Limit**

There is no age limit; however, candidates should preferably less than 45 years of age on the last date of submission of applications. In case of a tie in the process of fulfilment of selection criteria, preference shall be given to those of younger age.

- **Quotas**

  All Pakistani students shall be selected on the basis of merit.

- **English Language Requirements**

  Applicants should have an appropriate level of English language proficiency. Foreign applicants from non-English speaking countries who submit results for English proficiency tests such as TOEFL or IELTS will be given preference. A minimum TOEFL score of 450 on the paper-based test or 200 on the computer-based test is recommended; a minimum IELTS score of 6 is recommended.

- **Computer Skills Requirements**

  Additionally, given that most assignments will be computer-based, all applicants are required to have basic computer skills, including word processing, spreadsheet processing and using basic Internet services such as the World Wide Web and e-mail.

Application Procedures

Applications *must* be made on the prescribed original application form available at the University's Website.

Completed applications should include attested photocopies of the following:

- Domicile certificate
- National Identity Card
- Final degrees /certificates / along with transcripts (HEC Certified)
- Result for GAT and any language proficiency tests (TOEFL/ IELTS) if required
- Experience certificate(s)
- 3 passport-sized photographs
- Professional resume (one page, optional)
- 2 stamped self-addressed envelopes

Completed applications must reach the Office of the Registrar on the address given by the closing date. Incomplete applications and applications received after the closing date will not be entertained.

The final decision regarding appropriateness of a candidate's public health experience rests with the MSPH Admissions Committee.

Admissions Procedures

MSPH Admissions Committee

SZABMU has its own MSPH Admissions Committee, comprised of the Dean Basic Medical Sciences, the MSPH Program Coordinator/ Chairperson, Registrar, and one Senior Faculty Member. The MSPH Admissions Committee is responsible for the final selection of applicants to be admitted into the MSPH Program. It establishes procedures for the timely review of applications to the Program. Deferrals of admission are also at the discretion of the MSPH Admissions Committee.

Final Selection

The applicant's acceptance is contingent upon the receipt of all required documents including official transcripts. The MSPH Admissions Committee is responsible for identifying those students with missing documents and/or credentials which do not meet eligibility standards.

Candidates fulfilling the eligibility criteria will take a written screening exam. Based on the performance in the screening test, the candidates will be short-listed for an interview.

The final selection shall be done on the basis of the following distribution of marks:

Criteria	Maximum Weightage %
Previous academic record score*	10
Previous public health experience score	10
Screening examination score	50
Interview score	30
Total score	**100**

* The marks obtained in the final examination of the qualifying degree as mentioned in the eligibility criteria.

Annex 4: Details of Selected Courses

	Course	Domains/ Subtopics
	Introduction to Public Health	Historical Perspectives in Public Health
		Contemporary issues in Public Health
		Health and its determinants
		Domains of Public Health (Health Protection, Health Improvement, Health Services)
		Functions of Public Health (Public health Intelligence, Academic Public Health and Workforce Development)
		Competencies of Public Health
		Brief health profile of Pakistani population
		Public Health Programmes in Pakistan
		Health policies in Pakistan
		Consensus Building exercises Group works
		Future directions for Public Health
	Research Design	1.Good Public Health Professionals
		2. Maintaining good PH Practice
		3. Teaching and training responsibilities
		4. Relationship with others
		5. Working with Colleagues
		6. Probity
		7. Health and self-care
		Discovering the discipline of research
		General Tools of research
		The Library and its resources
		Computer and its soft wares
		Facility with language
		Statistics as a tool for research
		Mind-maps, conceptual frameworks, flow charts
		Observation and insight
		Stating the problem
		Reviewing the relevant literature
		Use of Endnote as software
		Basic Study designs
		Qualitative and Quantitative Approaches
		Justifying research methodology
		Establishing Research Criteria
		Writing a Research Proposal
	Global Health	Definition and concepts
		Global Burden of Disease
		Healthcare disparities between countries/regions
		Humanitarian Crises
		Health responsiveness in Resource-poor settings
		Gender and International Health
		Chronic Diseases
		Skills to Interface with different populations, cultures and

		healthcare systems
		Immigrant health
		Primary care within diverse settings
		Global sense of social responsibility
		Appreciate contrasts in expectations and healthcare delivery systems
		Cost of global environmental change
		Evolving global governance issues
		Global Health Policy
		Global Health Research; Agenda and impact
	Informatics in Public Health	MS Office-Overview
		Managing a long word document
		Making Effective Power-point presentations
		Making graphs in Excel
		Exporting data from different locations
		Processes for saving/securing data
		Ethical considerations for data storage/use
		Managing Literature in literature reviews
		Abstract writing-principles
		Thesis writing-principals
		Revisiting research protocols
		Securing research funds
		Realities of Fieldwork
		Critical Appraisal of published literature
		Capstone seminars
	Epidemiology-Basics	What is epidemiology? Scope and functions
		Concept of Population in Epidemiology
		Variation in Disease by time, place and person
		Variation; role of error, bias and confounding
		Cause and effect; the epidemiological approach
		Concept of risk and measures of disease frequency
		Presentation and interpretation of epidemiological data on risk
		Study design; interdependence and types
		Paradigms: the evolution of epidemiology
		Validity and reliability of data
		Surveillance and screening
		Outbreak investigation
		Practice of Epidemiology in Public health
	Biostatistics-Basics	Introduction and scope of biostatistics
		Variables
		SPSS Software-introduction
		Scales of measurement
		Types of data
		Descriptive statistics
		Measures of Central Tendency
		Measures of dispersion
		Summarising and Presenting data
		Textual and pictorial representation of data
		Probability
		Probability distributions
		Chance Vs statistical difference
		Applying statistical tests

		Confidence intervals
		Error and Bias
		Sampling and techniques
		Correlation and regression-introduction
	Medical Anthropology (part of Health Illness and Society Course)	Concepts and definitions
		Health and disease
		Illness and sickness
		Concept of body
		Biological and social model of illness
		Explanatory models
		Emic and Etic perspectives
		Culture bound syndromes
		Ethnocentrism and Cultural relativism
		Real remedies
		Self-care
		Medical pluralism
		Patterns of resort and health-seeking behaviour
		Factors influencing choice of healer and treatment
		Behavioural change
		Disability and disease
		Health and social care
		Role of anthropology in planning and management
		Governmentality and biological citizenship
		Migration and Ethnicity
		Applied anthropology in PH and Health Promotion
	Qualitative Research	What is qualitative research?
		Philosophical Issues in Qualitative research
		Qualitative research as an approach
		Theoretical Underpinnings
		Methods and methodology
		Functions of qualitative research methods
		Design issues: question, setting, time frame
		Data collection methods
		Negotiating research relationships
		Designing and selecting samples
		Concept of triangulation
		Observational methods
		Interviews (In-depth, Key informant, Focus Groups)
		Participatory methods
		Reflexivity and its use in qualitative research
		Sampling strategies
		Fieldwork Strategies
		Analysis; Principles, practice, processes
		Computer-assisted Qualitative Analysis
		Generalising from qualitative research
		Reporting qualitative findings
		Challenges and opportunities
	Health, Illness and Society	Introduction and concepts
		Gender and health
		Politics of Health; Social policy and Health of Populations
		Law and Public Health
		Ethics and Public Health
		Social Determinants of Health

		Economics of Health
		Rapid Urbanisation and its impact on health
		Health inequalities
		MDGs to SGDs
		Multiple Transitions affecting health
		Equity and equality in health care
		Perception of risk
	Public Health Leadership	What encompasses leadership
		Nine dimensions of leadership behaviour
		Public Health Leadership Competencies
		1. Systems thinking
		2. Political Leadership
		3. Collaborative team-leadership
		4. Leading the change
		5. Emotional Intelligence
		6. Leadership, organisational and learning development
		7. Ethics and Professionalism

References

BEGG, M. D., GALEA, S., BAYER, R., WALKER, J. R. & FRIED, L. P. 2014. MPH education for the 21st century: design of Columbia University's new public health curriculum. *American journal of public health,* 104**,** 30-36.

BHUTTA, Z. A., CHEN, L., COHEN, J., CRISP, N., EVANS, T., FINEBERG, H., FRENK, J., GARCIA, P., HORTON, R. & KE, Y. 2010. Education of health professionals for the 21st century: a global independent Commission. *The Lancet,* 375**,** 1137-1138.

BRADLEY, D. 1989. The Commission on Health Research for Development. *The Journal of tropical medicine and hygiene,* 92**,** 131.

CENTURY, I. O. M. C. O. A. T. H. O. T. P. I. T. S. 2003. *The Future of the Public's Health in the 21st Century*, National Academy Press.

CZABANOWSKA, K., SMITH, T., KÖNINGS, K. D., SUMSKAS, L., OTOK, R., BJEGOVIC-MIKANOVIC, V. & BRAND, H. 2013. In search for a public health leadership competency framework to support leadership curriculum–a consensus study. *The European Journal of Public Health***,** ckt158.

ELLIS, P. & ABBOTT, J. 2014. An overview of the new NHS Healthcare Leadership Model. *Journal of Renal Nursing,* 6.

FLEMING, M. L., PARKER, E. & GOULD, T. 2009. Educating the public health workforce: issues and challenges. *Australia and New Zealand health policy,* 6**,** 1.

FRENK, J., CHEN, L., BHUTTA, Z. A., COHEN, J., CRISP, N., EVANS, T., FINEBERG, H., GARCIA, P., KE, Y. & KELLEY, P. 2010. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *The Lancet,* 376**,** 1923-1958.

FRIED, L. P. 2015. Innovating for 21st-Century Public Health Education: A Case for Seizing This Moment. *American journal of public health,* 105**,** S5-S7.

GONCZI, A. 2013. Competency-based approaches: Linking theory and practice in professional education with particular reference to health education. *Educational Philosophy and Theory,* 45**,** 1290-1306.

HAGER, P. & GONCZI, A. 1996. What is competence? *Medical teacher,* 18**,** 15-18.

HORTON, R. 2010. A new epoch for health professionals' education. *The Lancet,* 376**,** 1875-1877.

HOUGHTON, S., BRAUNACK-MAYER, A. & HILLER, J. E. 2002. Training: Undergraduate public health education: a workforce perspective. *Australian and New Zealand journal of public health,* 26**,** 174-179.

HUSTON, M. R. 2011. The Marketplace of Ideas: Reform and Resistance in the American University. *Community College Enterprise,* 17**,** 77-80.

KARKEE, R. 2014. Public health education in South Asia: a basis for structuring a master degree course. *Frontiers in public health,* 2.

KOO, D. & MINER, K. 2010. Outcome-based workforce development and education in public health. *Public health,* 31**,** 253.

SHARMA, K., ZODPEY, S., GAIDHANE, A., SYED, Z. Q., KUMAR, R. & MORGAN, A. 2013. Designing the framework for competency-based master of public health programs in India. *Journal of Public Health Management and Practice,* 19**,** 30-39.

WHITE, F. 2013. The imperative of public health education: a global perspective. *Medical Principles and Practice,* 22**,** 515-529.