Program Title

PhD Public Health

PhD in Public Health

Introduction

The recent global trend toward evidence-based practice and medicine has increased demand for high-quality evidence generated through rigorous research methods. This, in turn, has led to a higher demand for health professionals with the necessary knowledge and skills to conduct high-quality, robust research. In Pakistan, this demand is further complicated by the triple burden of disease, the decentralization of the health department, outbreaks of new infections, underutilized primary healthcare, overwhelmed tertiary healthcare, demographic shifts, international pressure to eradicate polio, and natural disasters such as earthquakes and floods.

In recognition of its role as a leader in the healthcare system of Khyber Pakhtunkhwa and the wider country, Khyber Medical University has launched the first full-time "Doctor of Philosophy" program in Public Health within the province. KMU also takes pride in being one of only three public universities in Pakistan to offer a doctoral program in public health. The PhD program in public health at IPH&SS-KMU was established to develop a core group of experts trained to evaluate the country's practical issues and conduct high-quality research to find solutions, incorporating changes through effective health policies for the better health of the people.

The KMU IPH&SS has a strong faculty with expertise across various areas of public health. The institute is home to five foreign-qualified and one local PhD faculty members, supported by faculty with Master's-level qualifications from some of the world's top universities. Therefore, the institute is well-equipped to provide support and supervision to doctoral students in public health.

Program Vision

The PhD program envisions a society where well-being is prioritized and health equity is achieved.

Program Mission

To create a fulfilling educational opportunity for the next generation of public health consultants and health management leaders who are dedicated to promoting the health of local and global communities through evidence-based research, interdisciplinary training, and service.

Program aim and objectives

The main goal of the PhD program is to train public health professionals, scholars, and research scientists needed across various settings to address the country's 21st-century health challenges. The program aims to develop a workforce of public health experts for diverse roles, including faculty researchers at academic institutions, staff in national and provincial health departments, research institutes, private sector businesses and industries, and both national and international organizations.

The objectives of the PhD in public health program will be to:

- Develop skilled human resources with advanced public health knowledge and research abilities.
- Empower students to perform high-quality and thorough research in public health.
- Foster leadership across academic, research, practice, and service sectors of public health.

Learning Outcomes

By the end of this program, the learner will be able to

Data & Analysis

1. Explain quantitative, qualitative, mixed methods, and policy analysis research and evaluation methods used to address health issues at multiple levels, including individual, group, organization, community, and population.
2. Design projects that use quantitative, qualitative, or mixed methods for policy analysis or evaluation to address a public health issue.

3. Explain the use and limitations of surveillance systems and national surveys in assessing, monitoring, and evaluating policies and programs aimed at improving a population's health.

Leadership, Management & Governance

1. Propose strategies to improve health and eliminate health inequities by coordinating stakeholders, including researchers, practitioners, community leaders, and other partners.
2. Communicate public health science to diverse stakeholders, including individuals at all levels of health literacy, to inform and influence behaviors and policies.
3. Integrate knowledge, approaches, methods, and potential contributions from various professions and systems in tackling public health issues.
4. Develop a strategic plan and suggest strategies to advance inclusion and equity within public health programs, policies, and systems.
5. Suggest human, financial, and other resources to reach a strategic goal.
6. Cultivate new resources and revenue streams to achieve a strategic goal.
7. Facilitate shared decision-making using negotiation and consensus-building techniques.
8. Assess your strengths and weaknesses in leadership skills.

Policy & Programs

1. Develop a system-level intervention to tackle a public health issue.
2. Incorporate understanding of cultural values and practices into the development of public health policies and programs.
3. Integrate scientific data, legal and regulatory methods, ethical principles, and diverse stakeholder interests into policy development and analysis.
4. Suggest collaborative team strategies for enhancing public health.
5. Utilize implementation science frameworks and methods for designing and assessing public health policies and interventions.
6. Use ethical principles to promote social justice in public health research and practice.

Education & Workforce Development

1. Assess the audience's understanding and learning needs.

2. Provide training or educational experiences that encourage learning in academic, organizational, or community environments.
3. Use best-practice methods in teaching approaches.

Program structure and evaluation

The PhD program will require at least 18 credit hours of additional PhD-level coursework, followed by a comprehensive examination at the end of the coursework, in accordance with HEC criteria. During this coursework, students will attend regular weekly classes, which will be evaluated through end-of-semester exams and periodic class presentations by PhD students. Students will be allowed one retake of the comprehensive exam, per HEC policy. After passing the comprehensive exam, the candidate will continue research, culminating in the submission and defense of the thesis. If successful, they will be awarded a PhD degree.

Fees and Other Dues

Each PhD candidate must pay the tuition fee and any other charges set by KMU from time to time.

Annual review process

Year 1

The first year of the PhD includes advanced courses spread over two semesters. Each semester consists of courses worth nine credits. Students must maintain at least a 75% attendance rate in the coursework.

Comprehensive exam: The institute will administer the final comprehensive exam, with a maximum of two attempts.

After completing the coursework, students are required to present a research proposal to the Departmental Graduate Committee at a meeting organized by the relevant PhD Coordinator. In addition to the permanent members of the Graduate Committee, one or more subject specialists should participate, either from within or outside KMU. This must be followed by submitting the "PhD Student Review Form" (Annexure 1), a literature review, and defending the research proposal during the annual review meeting of the Advanced Studies Review Board (ASRB), which is specifically designed for PhD students.

Year 2 and Year 3

The annual review process for Years 2 and 3 includes submission of the “PhD Student review form” and presenting to the institutional Graduate Committee every six months, organized by the relevant PhD Coordinator. This is followed by submitting the “PhD Student review form," scientific report, and presenting at the annual ASRB meeting. Students and supervisors must complete the annual review process by January 31. Any student who starts late will generally be allowed to delay submitting their annual report until March 31.

Scientific report

A scientific report, preferably in the style of a journal article (6 to 10 pages, with the maximum being recommended), summarizing progress made over the past year. It may include an abstract, introduction, materials and methods, results, and discussion. Additionally, there should be a 500-1000-word section at the end of the report detailing the work planned for the following year. This report should be sent to the supervisor for assessment and comments (not exceeding half a page) and then submitted to the PhD Coordinator and ASRB.

Presentation at the ASRB Meeting

All PhD students must deliver an oral presentation at the ASRB annual meeting by the end of the year, which is specifically organized for them. This is followed by a discussion with the ASRB members, including at least two subject experts. The ASRB will then decide whether to approve students for the next session.

Thesis pending period

Final-year students who are within a year of the absolute thesis submission deadline will be explicitly interviewed about their progress during the ASRB annual review meeting.

Intention to submit form

An Intention to Submit form must be submitted to the PhD coordinator before the planned thesis submission date. This form begins the process of selecting and appointing a committee of examiners for each thesis.

Submission of thesis

The research work and degree award will be supervised by an HEC-recognized PhD supervisor and a co-supervisor with expertise in related fields. Upon admission to the PhD program, a supervisor will be assigned to the student to help guide them in choosing their research area and developing a research proposal and protocol. The supervisor and co-supervisor will also ensure the student develops essential skills aligned with their research area.

Acceptance/publication of at least one research paper in an HEC-approved/recognized journal (preferably in the W category) is essential before the submission of the dissertation.

The requirements for a PhD degree are typically completed within four years from the registration date. The maximum allowed time to complete a PhD is six years from the registration date. Only in exceptional cases, as detailed by the PhD candidate and supported by the supervisor, may the PhD advisory committee approve a one-year extension beyond the six-year limit.

Evaluation of the doctoral thesis by two distinguished foreign examiners from scientifically advanced countries, approved by HEC. The Plagiarism test must be performed on the dissertation before its submission to the two foreign experts. An open defense of the dissertation is an essential part of the PhD program following a positive evaluation. The viva voce examination is conducted by two national experts, approved by the Higher Education Commission (HEC). A copy of the Ph.D. dissertation, both hard and soft copies, must be submitted to HEC for record-keeping in the Ph.D. program, country directory, and for attestation of the PhD degree by HEC in the future.

Registration at the University

i. A student pursuing a PhD degree shall be registered with the university's teaching department or institution.
ii. The university registrar shall keep a register of PhD research scholars and assign a registration number to each scholar upon provisional admission.
iii. The University shall issue a "notification of registration" to each candidate approved or allowed for admission to the PhD program.
iv. Registration may be renewed upon payment of the prescribed fee if a student is readmitted within a year after being struck off the rolls for any valid reason.
v. A person enrolled in the PhD degree program shall be called a PhD research scholar.

vi. Each selected student must register and pay the dues within 30 days of the notification of registration. If they fail to do so, their admission will be considered cancelled. The university reserves the right to modify tuition and other applicable fees as necessary.

PhD Courses (all mandatory)

Semester 1

PH: 801 Principles of Public Health (1+1 Credit Hrs)

PH: 802 Advances in Epidemiology and Biostatistics (2+1 Credit Hrs)

PH: 803 Advances in Data Handling and Appraisal (2+1 Credit Hrs)

Semester 2

PH: 804 Advances in Systematic review and meta-analysis (2+1 Credit Hrs)

PH: 805 Advances in Qualitative research method (2+1 Credit Hrs)

PH: 806 Advances in Research Methodology and Bioethics (3+1 Credit Hrs)

Courses semester 1

PH: 801 Principles of Public Health (1+1 Credit Hrs)

Upon completion of the course, the students will be able:

- To explore the determinants of health status in different community settings
- To analyze how different populations carry different kinds and amounts of disease burden, and to use that knowledge for improving health by preventing disease
- Discuss the roles of public health in addressing health disparities and the needs of vulnerable populations
- To appraise specific public health activities and challenges
- To discuss the future of Public Health

COURSE OUTLINE

The course contents will include, lessons from the history of public health, the practice of public health, origins of public health, success of public health measures, local public health, public health relationship to 10 essential health services, infectious disease control, rising public health

risk of unvaccinated children, injuries and noninfectious diseases, improving access to medical care, accountability and evidence-based public health, public health system improvement, what are the barriers to public health in meeting its mission, global health threats and public health, challenges for public health.

Additional Resources and Reading Resources:

Textbook: Schneider, Mary Jane. Introduction to Public Health, 3rd edition, 2011.

Materials from this textbook will be supplemented with manuscripts from the peer-reviewed literature and other pertinent documents.

PH: 802 Advances in Epidemiology and Biostatistics (2+1 Credit Hrs)

Upon completion of the course, the students will be able to:

- Comprehend the basics of epidemiology and principles of various study designs
- Design a study and describe the validity and reliability of a study design
- Comprehend concepts and methods of statistics in Biomedical research
- Have a good command of the use of statistical computer software for data analysis

Course Contents:

The course contents will include: Descriptive epidemiology, analytic epidemiology and epidemiological inference, Classification, morbidity and mortality rates, ratios, incidence, prevalence, sampling, screening, epidemiological models, Types of study design; their importance, uses, and limitations, field trials, controlled epidemiological surveys, sources of bias, and causal models.

Introduction to statistics, types of statistical applications, population and samples, data analysis and presentation, variables, elementary statistical methods, tabulation, chart and diagram preparations, measures of central tendency and dispersion, sampling techniques and sample size estimation, probability and proportions, Tests of significance; normal test, t test, Chi square test, correlation and its applications, linear regression and multiple regression, logistic regression, sign test, Wilcoxon signed rank test, Mann Whitney test, Kruskal Wallis test, Spearman rank correlation, Clinical trials and intervention studies, Measures for developing health statistical

indicators: morbidity and mortality statistics, Use of latest statistical computer soft wares for data analysis.

Recommended Readings:

- Gordis, L. Epidemiology. Pennsylvania: W.B. Saunders Company. Latest Ed.
- Rothman KJ. Modern Epidemiology. Boston: Little, Brown and Company, Latest Ed.
- Kelsey JL, Thompson WD, Evans AS. Methods in Observational Epidemiology. New York: Oxford University Press, Latest Ed.
- Kleinbaum DG, Kupper LL, Morgenstern H. Epidemiologic Research: Principles and Quantitative Methods. Belmont, CA: Lifetime Learning Publications, Latest Ed.
- Lilienfeld DE, Stolley PD. Foundations of Epidemiology. New York: Oxford, Latest Ed.
- Daniel WW. Biostatistics: A Foundation for Analysis in the Health Sciences. Latest Ed. John Wiley & Sons. Inc. New York.
- Larson R and Farber B. Elementary Statistics: Picturing the World. Latest Ed, Prentice Hall Publications. USA.
- Oliver, M. and Combard, MS. Biostatistics for Health Professions. Latest Ed. Prentice Hall Publications, New Jersey.
- Statistical Software: SPSS; EPIINFO; STATA; SAS

Journals:

- British Medical Journal
- Epidemiologic Reviews
- Annals of Epidemiology
- American Journal of Epidemiology
- International Journal of Epidemiology
- European Journal of Epidemiology
- BMC Public Health

PH: 803 Data handling and appraisal (2+1 Credit Hrs)

The course is designed:

- To provide students with practical experience in data analysis using statistical software such as STATA and SPSS.

- To equip students with practical experience in the interpretation and presentation of data analysis.
- To recognize the importance of good practice in managing research data in general and apply it within your work context.
- To apply gained knowledge to develop and maintain a data management plan throughout the project.
- To help students effectively organize and document their data throughout their project.
- To help students understand the options they have to store and back up their data securely.

COURSE OUTLINE

The course contents will include, research data explained, data management plans, organizing data, file formats and transformation, documentation and metadata, storage and security, data protection, rights and access, preservation, sharing and licensing, consort (consolidated standards of reporting trials), strobe (strengthening the reporting of observational studies in epidemiology), PRISMA (preferred reporting items for systematic reviews an meta-analyses), moose (meta-analyses of observational studies), grade (grading of recommendations assessment, development and evaluation), Cochrane collaboration's risk of bias tool, and jadad scale.

Textbook:

Book Review: A Practical Approach to Analyzing Healthcare Data by Jon.

Additional Reading Resources:

- **STATA: http://www.stata.com/**
- **SPSS: http://www-01.ibm.com/software/analytics/spss/**

Courses semester 2

PH: 804 Advances in Systematic Review and Meta-Analysis (2+1 credits)

- This course aims to provide students with skills for designing and conducting high-quality systematic reviews and meta-analyses. The coursework includes presentation and computer-based exercises using STATA
- To discuss the basic principle and process of systematic review and meta-analysis

- To explore bias and heterogeneity in meta-analysis

COURSE OUTLINE

The course contents will include, introduction to and rationale of systematic reviews of health research, question formulation, protocol development, performing searches, planning searches, critical appraisal, introduction to statistical methods, introduction to software for meta-analysis, publication and reporting bias, systematic reviews of complex interventions, systematic reviews in context, assess the risk of bias in a randomized controlled trial, explain the basic methods of meta-analysis, use STATA software to perform meta-analysis, summarize the findings of a systematic review or meta-analysis, and critically appraise a systematic review.

Textbook:

Higgins, JPT, Green, S, editors. Cochrane Handbook for Systematic Reviews of Interventions. Chichester: Wiley, 2008.

Khan K, Kunz R, Kleijnen J, Antes G. Systematic reviews to support evidence-based medicine. 2nd edition. London: Royal Society of Medicine, 2011.

Journals:

- Jadad AR, et al. Methodology and reports of systematic reviews and meta-analyses: a comparison of Cochrane reviews with articles published in paper-based journals. JAMA. 1998 Jul 15; 280(3):278-80.
- Lindsay S. Uman. Systematic Reviews and Meta-Analyses. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3024725/pdf/ccap20_1p57.pdf
- Cochrane: **http://www.cochrane.org/**
- PRISMA: **http://www.prisma-statement.org/usage.htm**

PH: 805 Advances in Qualitative research method (2+1 Credit Hrs)

Upon completion of the course, the students will be able:

- To develop qualitative research skills
- To describe fundamental theories and basic methods for qualitative research

- To describe the role of the researcher in qualitative research
- To analyse and interpret qualitative research data

COURSE OUTLINE:

The course contents will include, overview and introduction to course, experience, interpretation, and qualitative research, research design, gathering data in the field, analyzing and interpreting data, understanding reliability and validity in qualitative research, ethical considerations in field-based research, increasing the generalizability of qualitative research, applied research, writing critical ethnographic narratives, post positivistic assumptions and educational research, computer software & qualitative research, focus groups, thematic qualitative data analysis, the quality of qualitative research, future directions for qualitative research.

Textbook: Qualitative Research & Evaluation Methods – October 2001 by Michael Quinn Patton

Journals:

- BMJ 2000;320:114
- International Journal of Qualitative Methods
- International Journal of Qualitative Research
- International Journal of Social Research Methodology
- Qualitative Research

PH: 806 Advances in Research Methodology and Bioethics (3+1 Credit Hrs)

Upon completion of the course, the students will be able to:

- Comprehend the basics of research methodology
- Comprehend basic knowledge of ethical issues in biomedical research
- Select and design a research project
- Critically analyze and communicate scientific data
- Review and write research articles in journals of international standards
- Analyze literature critically and comprehend the foundations of Bioethics theory
- Know how to deal with patients within the boundaries of ethics
- Know how to improve the basic health care services on ethical grounds

Course Contents:

The course contents will include: Selection of a field for research, drivers for health research, participation in collaborative international research, involvement in pharmaceutical company research, research ideas, criteria for a good research topic, types of research design, selecting research design, defining and refining research questions, generating research hypothesis, study sample and size, qualitative research, questionnaire design, research in health economics, ethics in research design, writing the research protocol, submitting a research proposal; application for funding & components of research proposal, implementing the research project, describing and analyzing research results, interpreting research results, communicating research, writing a scientific paper and dissertation or thesis, publishing a scientific paper, making a scientific presentation, assessment and evaluation of research.

The Bioethics part will include death and dying, the health professional-patient relationship, method and theory in bioethics, ethics and children, organ transplantation, concepts of distributive justice in healthcare, defining healthcare needs, research ethics, reproduction and fertility, and genetics and the human future.

Recommended Readings:

- Mahmoud F. Fathalla. A Practical Guide for Health Researchers. WHO Regional Office for the Eastern Mediterranean Cairo, 2004.
- Catherine Dawson. Introduction to Research Methods: A Practical Guide for Anyone Undertaking a Research Project. How to Books Ltd. Latest Ed.
- Arlene Fink. Conducting Research Literature Reviews: From the Internet to Paper. Sage Pubns, Latest Ed.
- Bjorn Reino Olsen, Petter Laake, Haakon Breien Benestad. Research Methodology in the Medical and Biological Sciences. Academic Pr. Latest Ed.
- Bausell R. Barker. Advanced Research Methodology: An Annotated Guide to Sources. Scarecrow Pr. Latest Ed.
- Debbie Holmes, Peter Moody, Diana Dines. Research Methods for the Biosciences. Oxford University Press.
- John Arras and Bonnie Steinbock. Ethical Issues in Modern Medicine, Mayfield, Latest Ed.

- Françoise Baylis, Jocelyn Downie, Benjamin Freedman, Barry Hoffmaster, and Susan Sherwin. Health Care Ethics in Canada. Harcourt Brace, Latest Ed.
- Tom L. Beauchamp and James F. Childress. Principles of Biomedical Ethics. Latest Ed. Oxford University Press.
- Jonathan Glover, Causing Death and Saving Lives. Penguin Books, Latest Ed..
- Glenn C. Graber and David C. Thomasma. Theory and Practice in Medical Ethics. Continuum, Latest Ed.
- Thomas A. Mappes and David Degrazia. Biomedical Ethics, 4th ed. McGraw-Hill, Latest Ed.
- Ronald Munson and Christopher A. Hoffman. Intervention and Reflection: Basic Issues in Medical Ethics. Latest Ed. Wadsworth.
- Gregory E. Pence. Classic Cases in Medical Ethics. 2nd ed., McGraw-Hill, 1990.
- Michael Yeo. Concepts and Cases in Nursing Ethics. Broadview, Latest Ed.
- Françoise E. Baylis. The Health Care Ethics Consultant. Humana Press, Latest Ed.

Journals:

- BMC Medical Research Methodology
- Health Services and Outcomes Research Methodology
- Bioethics
- Cambridge Quarterly of Healthcare Ethics
- Hastings Center Report
- Journal of Clinical Ethics
- Journal of Medical Ethics
- Journal of Medicine and Philosophy
- Kennedy Institute of Ethics Journal
- Nursing Ethics

Assessment Framework and Curriculum Blueprint

Teaching and Learning methods of coursework modules

- Interactive Lectures
- Group work, mainly relevant published literature

- Presentations on assigned topics, individual or group presentations
- Assignments/self-study and journal clubs
- Tutorials

Student Assessment Methods

- Midterm Exam to assess students' knowledge and understanding
- Assignments to assess students' writing and intellectual skills
- Final Term Exam to assess students' command of the subject.

Assessment Schedule

- Assessment 1 Class Exercises (Assignments) = Weekly
- Assessment 2 Mid Term Exam = 9th week
- Assessment 3 Final Term Exam = 18th week

Weighting of assessments

- Mid-term examination 20%
- Final-term examination 70%
- Semester work (Assignments) 10%
- Passing score for a module is 60%

Assessment Framework

The assessment strategy in the PhD Public Health program ensures an appropriate balance between formative and summative assessment to support both learning and evaluation of competency. Formative assessments, such as seminar presentations, assignments, literature critiques, and supervisory feedback sessions, are embedded throughout coursework and research milestones to provide ongoing guidance and constructive feedback. Summative assessments, including written examinations, proposal defense, comprehensive examination, dissertation submission, and viva voce, are used to rigorously evaluate achievement of program outcomes. This structured balance ensures that formative assessments actively promote learning and skill development, while summative assessments verify mastery and readiness for independent

scholarship, thereby maintaining alignment with the curriculum blueprint and fostering progressive advancement through the PhD program.

The PhD Public Health program employs an integrated assessment system designed to ensure that learning is comprehensive, competency-based, and aligned with the program's intended outcomes. The framework ensures that:

- Each module and research milestone is designed to holistically assess subject mastery (knowledge), research and analytical capabilities (skills), and professional integrity, leadership, and ethics (attitudes).
- Written examinations, assignments, oral presentations, project work, research proposal defence, dissertation, and viva voce are employed to capture different domains of learning. Multiple assessors conduct assessments to enhance fairness and reliability.
- Assessments are explicitly mapped to module outcomes, instructional strategies (lectures, seminars, workshops, and independent research), and program-level competencies to ensure validity.
- All assessments follow defined rubrics, published weightages, and clear timelines, with feedback provided to support academic development.
- Blueprinting and module-level Tables of Specifications ensure balanced coverage of content areas, cognitive levels, and research milestones throughout the program.

Program-Level Curriculum Blueprint

The following blueprint maps program competencies to core modules, research milestones, and their associated assessment methods:

Program Competency	**Relevant Modules (TOS Linked)**	**Research Milestones**	**Assessment Methods**
Advanced Research Methodology	Quantitative Research; Qualitative Research	Proposal Defence	Written exams, assignments, and proposal presentation
Critical Appraisal of Literature	Systematic Reviews; Epidemiology	Comprehensive Examination	Literature critiques, written tests, and viva

Epidemiological Analysis	Epidemiology; Biostatistics (within Quantitative)	Dissertation (Methods & Results chapters)	Data analysis projects, dissertation evaluation
Data Management & Statistical Skills	Quantitative Research; Biostatistics content	Dissertation	SPSS/STATA projects, oral defence
Public Health Theory & Leadership	Foundations of Public Health; Health Systems	Dissertation (Discussion & Policy chapters)	Essays, presentations, and dissertation defence
Ethics and Professional Conduct	Ethics in Research (within modules); Dissertation	Candidacy defence; Dissertation defence	Reflective reports, viva, dissertation review
Scholarly Writing & Dissemination	Academic Writing (embedded across modules)	Manuscript Submission; Dissertation	Writing portfolio, manuscript review, viva

Integration of Module-Level TOS

Each of the six taught modules is supported by a **Table of Specifications (TOS)** detailing topic coverage, cognitive levels (Bloom's taxonomy), and assessment weightage. These TOS documents (**Annexures 1-6**) ensure balanced distribution of content and assessments. Together, they operationalize the program blueprint at the module level, ensuring internal consistency and cumulative progression of learning.

Research Milestones and Assessments

Beyond taught modules, the PhD program incorporates research-focused milestones:

- **Comprehensive Examination at the end of year 1:** Assesses integration of knowledge across modules.
- **Research Proposal Defence (Year 1–2):** Evaluates readiness for independent inquiry.
- **Dissertation Submission and Defence:** Demonstrates mastery of research skills, scholarly writing, and contribution to the discipline.

Each stage uses multiple assessors and formal rubrics to ensure fairness and transparency.

Integrative Research and Teaching Rotations

To seamlessly integrate theoretical knowledge with practical application, the PhD program embeds teaching and research rotations in diverse public health settings throughout the candidacy period. In their second year, students dedicate two semesters to two core rotations:

1. **Research Supervision Practicum**

   PhD Public Health students will engage in structured research supervision activities, wherein they mentor and co-supervise Master-level public health students conducting field-based or implementation research. This practicum allows PhD scholars to integrate theoretical frameworks and methodological training into real-world student projects. Under faculty oversight, doctoral candidates will provide feedback on proposal or synopsis development, ethical compliance, data collection strategies, and analysis plans. The experience culminates in a joint review of final student outputs, fostering leadership, teaching, and applied research competencies critical for public health scholars.

2. **Teaching Fellow Rotation**

   During the same academic year, candidates assist with graduate-level courses, such as implementation science, health policy, and advanced epidemiology, synthesizing and co-teaching theoretical frameworks and supporting assignments that demonstrate application in real-world policy or field settings.

DISTRIBUTION OF SEATS

The number of seats in the PhD Public Health program will be determined from time to time based on available slots and the number of Supervisors.

FEE STRUCTURE: The Fee structure of the PhD Public Health Program is as follows:

Fee per semester	**Rs. 10,3000**
KMU Registration Fee (One-time)	**Rs. 1,800**
PMDC Registration Fee (One-time)	**Rs. 1,000**
PhD Thesis Evaluation Fee (One time)	**Rs.1,40,000**

Note: The fee charged by PM&DC may change as per PM&DC requirements.

ADMISSION TO PHD

Qualification

For admission into the PhD, a minimum CGPA of 3.0 (out of 4.0 in the Semester System) or First Division (in the Annual System) in M. Phil/MS degree in any public health discipline from a PMDC/HEC recognized university/institution.

Admission criteria and procedures:

1. Each candidate shall make an application for admission to the PhD program in response to an advertisement by the university on the prescribed form, along with documents specified in the form.

2. The allocation of marks for determining merit for admission to the PhD program shall be as follows:

   Academic record: 40%
   Admission test: 40%
   Interview: 20%

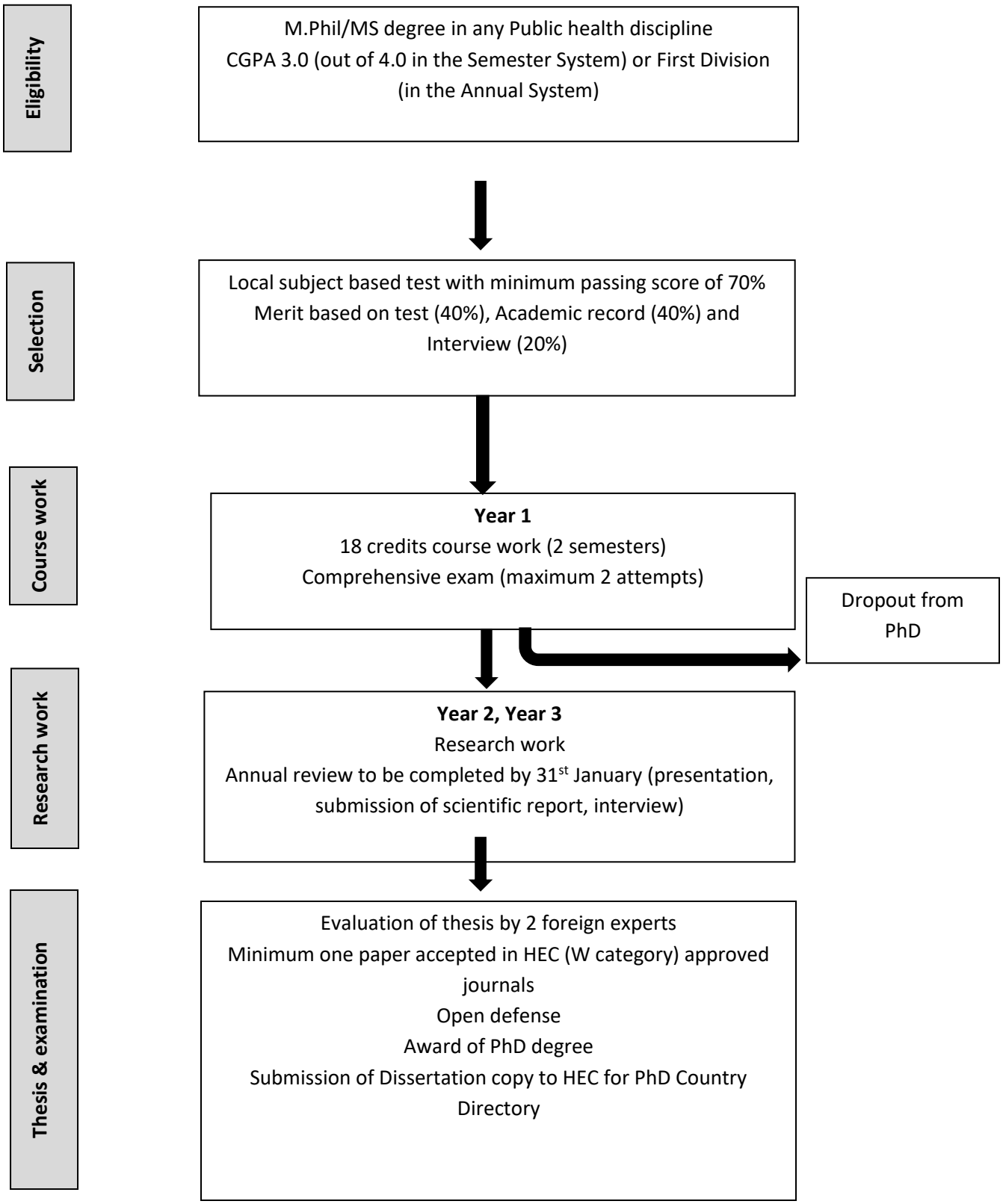
   The candidate must have passed the admission test (public health [70%], English verbal [15%], and analytical reasoning [15%]), developed locally by the University, with a minimum passing score of 70%.

3. Successful candidates in the above test will submit a two-page synopsis on the topic that the candidate may like to pursue for his/her doctoral thesis. Synopsis must reflect the background, rationale, research question & objectives, proposed methodology, and expected outcomes of the research.

The Khyber Medical University, Peshawar, PhD Regulations 2011

The Khyber Medical University, Peshawar, PhD regulations of 2011 will govern matters relating to admissions, registrations, and examinations for the PhD program.

Figure 1: Flow diagram of PhD program at IPH&SS KMU



PhD Supervision

PhD supervision in this program strictly follows the HEC PhD Policy 2023 to ensure quality mentorship and academic rigor. Each PhD student is assigned a qualified supervisor who is approved under HEC criteria, holds a relevant terminal degree, and has an active research profile with publications in recognized journals. When necessary, co-supervisors may be appointed to offer interdisciplinary or specialized guidance. Supervisors are responsible for mentoring candidates in research design, scholarly writing, ethics, and ensuring timely progress through program milestones, including proposal defense, dissertation development, and final evaluation. The supervision process emphasizes regular progress reviews, documented advisory meetings, and constructive feedback, fostering a collaborative environment that complies with both institutional regulations and the standards set by the HEC PhD Policy.

In line with institutional procedures, scholars have the option to formally request a review or change of supervisor during the first year of their program, if deemed necessary. Such requests are processed through the PhD Program Committee, ensuring transparency, justification, and approval following university regulations.

PhD Supervision: Roles and Responsibilities

PhD supervision in this program is governed by the principles and requirements outlined in the HEC PhD Policy 2023, ensuring high-quality mentorship and structured guidance throughout the doctoral journey.

Responsibilities of the Supervisor

PhD supervisors are required to:

- Meet HEC Eligibility Criteria: Hold a PhD in a relevant field with an active research profile and publications in recognized journals.
- Guide Research Activities: Provide academic and research direction, ensuring alignment with ethical standards and program requirements.

- Monitor Progress: Conduct documented progress reviews at least once per semester, guiding students on milestones such as proposal defense, dissertation work, and publications.
- Provide Feedback: Offer timely, constructive feedback on research design, writing, and analytical work to ensure scholarly rigor.
- Ensure Compliance: Oversee adherence to institutional and HEC guidelines regarding dissertation timelines, coursework completion, and quality benchmarks.
- Facilitate Research Publications: Encourage and support students in producing at least one research publication derived from their dissertation work, as per HEC 2023 requirements.
- Maintain Professional Conduct: Uphold academic integrity, impartiality, and ethical mentoring practices throughout the supervisory relationship.

Responsibilities of the PhD Scholar

As stipulated by HEC PhD Policy 2023, PhD scholars are expected to:

- Engage Actively in Research: Maintain consistent progress on dissertation work and comply with agreed timelines.
- Attend Advisory Meetings: Participate regularly in scheduled supervisory sessions and maintain documented progress reports.
- Complete Program Requirements: Successfully pass coursework, proposal defense, and comprehensive examination within prescribed timelines.
- Publish Research Output: Produce at least one publication from their PhD research in an HEC-recognized journal, fulfilling graduation requirements.
- Uphold Research Ethics: Adhere to ethical research conduct, institutional policies on plagiarism, and approved protocols for data collection and reporting.

- Seek Feedback and Implement Guidance: Actively incorporate supervisory input to improve research quality and scholarly output.

Supervisory Structure

Each PhD scholar is assigned one primary supervisor who meets HEC-approved criteria. A co-supervisor may be appointed (as per HEC guidelines) to provide additional disciplinary expertise or collaborative research support.

Progress Monitoring

All supervision activities, including meetings and evaluations, are formally documented using the PhD Progress Review Forms prescribed by the University, ensuring compliance with the HEC and QEC-KMU.

Student Support Services

The PhD Public Health Program at KMU-IPH&SS is dedicated to fostering a supportive, inclusive, and student-centered environment that facilitates academic success, personal well-being, and professional development. Student support services are an integral part of the program, designed following the guidelines of the Pakistan Medical and Dental Council (PMDC), the Higher Education Commission (HEC), and global best practices in doctoral education.

Academic Support

Academic support is provided through structured mentorship and advising. Each student is assigned a faculty supervisor who not only guides their research but also supports their overall academic development. Additional support in research methodology, data analysis, and scientific writing is available through workshops, seminars, and access to online educational resources, which are announced from time to time by ORIC-KMU. The university library provides access to digital databases and journals, as well as training in reference management.

Health and Wellness Services

To support students' physical and mental health, the university offers access to medical and psychological services either on campus or through affiliated providers (The KMU Institute of Family Medicine and KMU Institute of Mental Health and Behavioral Sciences). Students facing emotional, academic, or adjustment difficulties can benefit from confidential counselling services. The program also accommodates students with disabilities, ensuring access to educational materials and spaces through reasonable adjustments.

Career and Professional Development

Career development and professional growth are encouraged through a range of initiatives, including CV-building workshops, leadership training, public speaking seminars, and networking opportunities with local and international public health institutions and researchers through International Public Health Conferences. Opportunities for teaching assistantships and fieldwork in community settings are facilitated to enhance practical learning and employability.

Financial Support

Financial assistance is available in the form of merit-based scholarships, need-based scholarships, research grants, and travel support for conference presentations through ORIC-KMU. The program is committed to transparency in the distribution of financial aid and provides students with clear guidance on application procedures and eligibility criteria.

Confidentiality of Academic and Medical Records

Confidentiality of academic and medical records is strictly maintained in line with institutional policies, HEC ethical standards, and international standards. All personal information is stored securely and accessed only by authorized personnel on a need-to-know basis. Academic and health records (if any) are not shared without the student’s informed, written consent, except where disclosure is required by law or necessary for student safety. Students have the right to review their records and request corrections to ensure accuracy and fairness.

Confidential Incident Reporting and Support Mechanism

The program recognizes that students may occasionally face unintended academic, professional, or personal incidents that require sensitive handling. A confidential mechanism is in place to

support students who encounter such challenges, whether they relate to ethical breaches, academic misconduct, medical emergencies, psychological distress, harassment, or any other matter impacting their well-being or academic progress. Students may report incidents to designated faculty advisors through grievance redressal, the counselling committee, or the program coordinator through secure and confidential channels. Each case is reviewed with discretion, empathy, and fairness, ensuring that students receive appropriate guidance, support, or referral to relevant institutional services. The process emphasizes non-punitive resolution, unless required otherwise by law or institutional policy, and upholds the student's dignity, rights, and privacy at all stages.

Co-Curricular Activities

The program encourages active participation in co-curricular activities that complement academic learning and foster personal growth. These activities may include journal clubs (a regular part of the timetable), health awareness campaigns (joint efforts with KMU-IFM), interdisciplinary research forums (UK-based Universities and Agha Khan University), debate competitions, 3 MT competitions, and public health symposiums. All these activities will partly be funded by ORIC-KMU and partly through different research grants. By engaging in such initiatives, students develop critical thinking, leadership, communication, and teamwork skills—essential qualities for future public health professionals. The university also facilitates student-led initiatives and celebrates national and global public health days, creating platforms for advocacy, dialogue, and community engagement.

Students are also supported through peer mentorship, student societies, and engagement in community service initiatives that enrich their academic journey and strengthen professional networks. The program ensures that students have access to a responsive administrative support system, including portals for academic progress tracking, thesis submissions, and general queries. In case of grievances, a formal redressal mechanism is in place to ensure fair and timely resolution.

Annex 1: TOS, Principles of Public Health

No	Learning outcomes By the end of the module on Principles of Public Health, the PhD students should be able to:	Contents	Cognitive	Psychomotor	Affective	Mode of information transfer	Venue	Time	Assessment	Facilitator
1	To explore the determinants of health status in different community settings	history of public health, the practice of public health, origins of public health local public health success of public health measures	C2			Interactive Lecture	Lecture hall	2 hours	Multiple choice questions	
2	To analyze how different populations carry different kinds and amounts of disease burden, and to use that knowledge for improving health by	infectious disease control, rising public health risk of unvaccinated children, injuries, and non-infectious diseases, improving access to medical care	C4			Interactive Lecture	Lecture hall	2 hours	Multiple choice questions and assignments	

	preventing disease									
3	Discuss the roles of public health in addressing health disparities and the needs of vulnerable populations	What are the barriers to public health in meeting its mission	C2			Interactive Lecture	Lectu re hall	2 hours	Multiple choice questions and Assignme nts	
4	To appraise specific public health activities and challenges	public health relationship to 10 essential health services global health threats and public health, challenges for public health	C5			Interactive Lecture	Lectu re hall	2 hours	Multiple choice questions and class presentati on and assignmen ts	
5	To discuss the future of Public Health	accountability and evidence-based public health, public health system improvement	C2			Interactive Lecture	Lectu re hall	2 hours		

Annex 2: TOS, Advanced Epidemiology and Biostatistics

No	Learning outcomes By the end of the module of Advanced Epidemiology & Biostatistics, the PhD students should be able to:	Contents	Cognitive	Education theory	Psychomotor	Affective	Mode of information transfer	Venue	Time	Assessment
1	Comprehend, examine, and appraise the basics of epidemiology and principles of various study designs and relevant published literature	Elements of Research Design Cross-sectional Case-control studies Cohort Studies Randomized Control Trials	C2, C3, C5	Cognitive Constructivism	N/A	N/A	Interactive Lecture, Mini-seminar, Self-directed learning	Lecture room	3 hours	Short Answer Questions Modified Essay Question Intellectual Reasoning
2	Design and articulate a study and describe the validity and reliability of the study design	Estimating risk: Absolute Risk, relative risk, Attributable Risk Validity and Reliability of the	C6	Constructivism	A4		Interactive Lecture, Mini-seminar, Self-directed learning	Lecture room	3 hours	Short Answer Questions Modified Essay Question Intellectual Reasoning

		epidemiological studies Investigation of an epidemic and outbreak investigation Direct and Indirect standardisation Bias, Confounding, Effect Modification and Chance Validity and Reliability of screening tests								
3	Comprehend and execute concepts, & Test, argue, design, & articulate and perform methods of statistics in Biomedical research	Probability, Hypothesis testing, Type I and II errors and statistical power Measures of central tendency and dispersion Comparison of proportions Comparison of means Correlation and linear regression analysis	C2, C3, C4, C5, C6	Cognitive Constructivism	P3, P4	A5	Interactive Lecture, Mini-seminar, Self-directed learning	Lecture room	3 hours	Short Answer Questions Modified Essay Question Intellectual Reasoning

		Logistic regression analysis Survival Analysis								
4	Demonstrate, articulate, and perform to have a good command of statistical computer software for data analysis	SPSS software for data input and analysis	C6	Constructivism	P3, P4	A5	Interactive Lecture, Mini-seminar, Self-directed learning	Lecture room	3 hours	Workplace based Assessment

Annex 3: TOS, Data Handling and Appraisal

Learning outcomes	Contents	Cognitive	Education theory	Psychomotor	Affective	Mode of information transfer	Venue	Time	Assessment
Comprehend and appraise principles of research data management, data organization, and documentation	Elements of Data Management Plans	C2, C3, C5	Cognitive Constructivism	P3	A4	Interactive Lecture, Demonstration, Self-directed learning	PhD Room / Zoom	3 hours	Short Answer Questions
	Data organization and file formats								Intellectual Reasoning
	Data transformation and documentation								
	Data storage, security, and backup strategies								
	Data protection, access rights, and ethical considerations								
Design and manage a dataset using best practices in data handling	Creating and labeling variables	C6	Constructivism	P4	A5	Interactive Lecture, Hands-on Practice, Mini-project	PhD Room / Zoom	3 hours	Workplace-based Assessment
	Data cleaning and validation								(Dataset Submission & Documentation Review)
	Storing commands and output								
	Merging and appending datasets								
Execute and interpret data analysis using STATA for public health research	Reading and importing data (Excel, CSV, etc.)	C3, C4, C5, C6	Cognitive Constructivism	P3, P4	A5	Interactive Lecture, Software Demonstration, Guided Practice	PhD Room / Zoom	3 hours	Modified Essay Question
	Exploring data and generating descriptive statistics								Workplace-based Assessment (STATA output presentation)
	Creating tables and graphs to describe data								
	Performing inferential statistics and regression								

	analysis (linear & logistic)								
	Testing assumptions for regression models								
Demonstrate proficiency in using STATA for data analysis and presentation of results	Navigating STATA interface	C6	Constructivism	P4	A5	Hands-on Lab, Peer Presentation, Mini-seminar	PhD Room / Zoom	3 hours	Research Presentation (Oral)
	Writing and saving do-files								Workplace-based Assessment
	Generating and exporting tables and graphs								
	Presenting analysis steps and findings clearly								

Annex 4: TOS, Systematic Review

Systematic Review						
S.No	**Outcomes**	**Cognitive**	**Psychomotor**	**A**	**MITs**	**%age**
1.	Employ the importance of systematic reviews and how to find them.	C2			Lecture Group work	
2.	Demonstrate the key features of a systematic review.	C3			Lecture Small group teaching	
3.	Evaluate the importance of using rigorous methods to conduct a systematic review	C5			Group work	
4.	Be able to critically appraise different types of systematic reviews	C5			Lecture and small group work	
5.	Be able to deploy a range of searching, appraisal and analytical skills and knowledge in order to: specify a review question, plan and conduct a systematic review of randomized controlled trials, observational studies or qualitative studies.		P3			
6.	Explain the elements of a well-defined review question	C4				
7.	Apply the steps in a systematic review	C3				
8.	Be able to synthesize the results of studies identified in a review, narratively, quantitatively and qualitatively and explore sources of heterogeneity.		P3			

Annex 5: TOS, Qualitative Research

No	Learning outcomes By the end of the module of Qualitative research, the PhD students should be able to:	Contents	Cognitive	Psychomotor	Affective	Mode of information transfer	Venue	Time	Assessment
1	Be able to demonstrate an understanding of some of the key features and the methodological assumptions underpinning qualitative research.	Introduction to qualitative research (differences and similarities between qualitative and quantitative research) Key features of most qualitative research approaches (insider perspective, thick description, methodological naturalism, interaction to generate knowledge	C2 C2,C3			Interactive Lecture Class activity	Lecture hall	2 hours	10% Multiple choice questions (MCQs), Shor essay questions (SEQs)
2	Be able to demonstrate an understanding of the role of the reflexivity in qualitative research. Recognize the interactional nature of qualitative data generation and	Reflexivity in qualitative research (Finlay 2002)	C2,C3		A	Interactive Lecture	Lecture hall	2 hours	20% MCQs, SEQ and assignment

	understand the implications for creating knowledge. Understand processes involved in being 'rigorous' as a qualitative researcher								
3	Be able to identify research questions for which qualitative research can be useful Be able to formulate qualitative research questions for Community dentistry/ dental public health issues.	Choosing a research question Designing qualitative interview questions Types of interviews	C2,C3,C4, C6			Interactive Lecture Class activity	Lecture hall	2 hours	20% MCQs, SEQs, assignment
4	Be able to understand the key skills and behaviours of a qualitative interviewer. Be able to recognise the interactional nature of qualitative data generation. Be able to understand and reflect on the interpersonal and intersubjective aspects of qualitative research. Be able to design, plan and conduct qualitative research interview in ethical a rigorous manner	Field work skills in qualitative research (qualitative research interviewing, intersubjectivity, rigour and ethics in qualitative research)	C2,C3,C4, C5,C6		A	Interactive Lecture Observation (videos)	Lecture hall	2 hours	20% MCQs, SEQs assignment

6	Be able to understand, plan and conduct interpretive thematic analysis of qualitative research data using appropriate coding techniques	Overview of different approaches to analysing qualitative data. Steps involved in conducting a thematic, interpretive analysis (drawing on some aspects of grounded theory to produce findings of relevance and utility to dental public health).	C2 C2,C3,C4, C5,C6			Interactive lecture Group work	Lecture hall	2 hours	20% MCQs, SEQs
7.	Be able to select and present qualitative research findings. Be able to demonstrate and critically evaluate the rigor of the researcher's analytical work.	Concepts and criteria for rigour in qualitative research (application of reflexivity to qualitative research).	C2,C3,C4, C5,C6			Lecture Class activity (Group work)	Lecture hall	2 hours	10% MCQs, SEQs

Annex 6: TOS, Advances in Research Methodology

No	Learning outcomes By the end of the module on Advances in Research Methodology and Bioethics, the PhD Public Health students should be able to:	Contents	Cognitive	Psychomotor	Affective	Mode of information transfer	Venue	Time	Assessment	Facilitator
1	Comprehend basics of research methodology	Selection of a field for research, drivers for health research, participation in collaborative international research, participation in pharmaceutical company research, research ideas, criteria for a good research topic, types of research design, selecting research design,	C2			Interactive Lecture	Lecture hall	3 hours	Multiple choice questions Assignments	

		ethics in research design defining and refining research questions, generating research hypothesis, study sample and size, qualitative research, questionnaire design, research in health economics								
2	Comprehend basic knowledge of the ethical issues in biomedical research	ethics in biomedical research	C2			Interactive Lecture	Lecture hall	3 hours	Multiple choice questions and assignments	
3	Select and design a research project	writing the research protocol submitting a research proposal; application for funding & components of research proposal,	C4			Interactive Lecture	Lecture hall	2 hours	Proposal development Presentations	

		implementing the research project								
4	Critically analyze and communicate scientific data	describing and analyzing research results, interpreting research results, communicating research	C4			Interactive Lecture	Lecture hall	2 hours	Multiple choice questions and Critical review of scientific papers and presentations	
5	Review and write research articles in journals of international standards	writing a scientific paper and dissertation or thesis, publishing a scientific paper, making a scientific presentation, assessment and evaluation of research.	C5 C6			Interactive Lecture	Lecture hall	2 hours	Multiple choice questions and assignments (writting a research article)	

6	Analyze literature critically and comprehend the foundations of Bioethics theory	method and theory in bioethics. research ethics;	C2 C4			Interactive Lecture	Lecture hall	2 hours:	Multiple choice questions and assignments Class discussions	
7	Know how to deal with patients within the boundaries of ethics	death and dying; health professional patient relationship; ethics and children; organ transplantation, reproduction and fertility; genetics and the human future.	C2 C3			Interactive Lecture	Lecture hall	2 hours:	Multiple choice questions and assignments	
8	Know how to improve the basic health care services on ethical grounds	defining health care needs; concepts of distributive justice in health care;	C2 C3			Interactive Lecture	Lecture hall	2 hours:	Multiple choice questions and assignments	