



**Title of Program: Master of Philosophy in  
Community Dentistry**

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# **Introduction to the Master of Philosophy in Community Dentistry (MPhil-CD) Program**

Community Dentistry is the science and the art of preventing and controlling oral disease and promoting oral health through organized community efforts. The MPhil-CD program is aimed at strengthening the health system as well as addressing the current gap in the market regarding post-graduate Community Dentistry programs in the country. The MPhil-CD program is tailored to develop the eight core competencies of a dental public health specialist as identified by the “American Association of Public Health Dentistry”.

## **Program Mission Statement:**

The MPhil-CD program is committed to promote high quality oral health education and disseminate evidence based health promotion practices. Overall mission is to produce students who are able to address the current oral health issues through advocacy, education, research and leadership.

## **Date of Commencement**

Spring semester, 2020.

## **Objectives of the program**

The graduates of the MPhil-CD program are expected to

1. Demonstrate the ability to incorporate ethical reasoning and actions that promote culturally competent oral health care to individuals and populations.
2. Critique, synthesize and apply information from scientific and lay sources to improve the public’s oral health.
3. Describe social and health care systems and determinants of health and their impact on the oral health of the individual and population.
4. Assess risk for oral diseases and select appropriate, evidence-based preventive interventions and strategies to promote health and control oral diseases at the individual and population level.
5. Demonstrate the ability to access and describe the use of population-based health data for health promotion, patient care, and quality improvement.

6. Demonstrate the ability to communicate and collaborate with relevant stakeholders to advocate for policies that impact oral and general health for individuals or populations.
7. Develop a capacity for lifelong learning and professional growth in order to provide leadership that utilizes principles of dental public health.
8. Demonstrate the ability to participate in inter-professional care across the lifespan of people from diverse communities and cultures.

## **Program Learning Outcomes:**

At the end of this program The students will be able to

- Use knowledge of the basic dental and clinical sciences to ensure appropriate need assessment and prevention.
- Use knowledge, evidence and professional judgement to arrive at solutions appropriate to the community needs and wishes.
- Demonstrate appropriate communication skills with community stakeholders including patients, relatives and other healthcare professionals.
- Recognize the importance of disease prevention and health promotion and conveying this as appropriate to individual patients and the wider community.
- Recognize ethical, professional and legal responsibilities and displaying appropriate attitudes and behavior.
- Demonstrate accurate record keeping and knowing where and how to source and analyze information relevant to good clinical practice.

## **Scope of the program**

The non-existence of post-graduate Community Dentistry program in the country has led to the shortage of human resource in this field. The graduates of MPhil-CD will be utilized in the dental colleges of Pakistan as faculty members and will provide a platform for the dentists to be collaborate and promote oral health of the population in the country.

## **Admission Criteria and Procedures**

### **Introduction:**

The University abides by its strict merit-based criteria with absolute transparency to select its student for the MPhil-CD Program. Every year, the number of

Pakistani and foreign students is fixed by the Graduate & Research Management Council of the University.

### **Admission**

- Student Selection Criteria
- Application Requirements
- Evaluation of Applications
- Admission Test
- Short Listing and Interviews
- Application Timeline
- Tuition and Other Charges

### **Student Selection Criteria**

This is an equal opportunity program and there is no discrimination based on gender, religion or ethnicity. However, females and minority groups are encouraged to join this program.

- Entry into the MPhil-CD program will require at least 16 years of education in an oral health-related field, completed before the admission date. This may include
- BDS or equivalent qualification (Recognized by PMDC ).
- Master of dental hygiene.
- Master of dental technology
- Master of dental nursing
- Applicant's background should reflect a significant interest in Oral Health e.g. research projects, publications, symposia, and workshops attended;
- The program favors individuals with appropriate academic credentials. Applicant must demonstrate evidence of scholarly ability and personal maturity;
- Basic computer literacy is expected.

### **Application Requirements**

The Application Form must be completed and submitted, along with the following supporting documents:

#### **Scholastic Achievements:**

A complete set of official transcripts of academic record in college, graduate school, and/or professional schools, with certification of degrees, conferred, courses taken and grades received.

#### **Statement of Purpose:**

A statement of purpose, summarizing past education, training, and experience, as well as interests and future aims, is required. A curriculum vitae and list of publications, if any, should be included.

### **Evaluation of Applicants**

Applicants will be evaluated in four stages:

Stage I: Applications are reviewed and shortlisted.

Stage II: Shortlisted candidates need to pass the -MPhil-CD Program Admission test.

Stage III: Includes interviews with the senior faculty members of the program.

Stage IV: Final selection will be made by our admission committee after approval from Graduate & Research Management Council (GRMC).

### **Admission Procedure**

All short-listed applicants are required to write the MPhil-CD Admission Test. The Admission Test consists of four components: English, Logical Reasoning, Quantitative Methods, and Oral Health Knowledge. The English language component evaluates English competency and reading comprehension, necessary for successful learning of the program courses. The logical reasoning component is aimed to assess the logical thinking ability of the candidates, needed for critical thinking and problem solving skills in the hospital management. The quantitative component is designed to assess basic knowledge of the mathematics and common statistics, needed for understanding the modules that involve monetary businesses of the hospitals. The oral health component will test for the aptitude in administering and managing the basic health and hospital activities.

The University has not authorized any publication or preparatory classes for the Admission Test.

### **Short-listing and Interviews**

Applicants will be short-listed on the basis of the Admission Test. The purpose of the interview is to assess a variety of attributes, including integrity, motivation for the interest in the program, maturity, social and cultural awareness, knowledge of public health issues in developing nations and evidence of initiative and commitment to the profession.

Interviews will be conducted at Khyber Medical University, Peshawar.

### **Tuition and Other Charges**

Educational expenses for selected candidates, including tuition fee, course material, computer lab fee, and examination fee, will be Rs. 100,000 per semester for four semesters.

## **Application Procedure**

The application must be made on the prescribed original application form available in the prospectus of the university. The application form is provided as part of the student prospectus. The prospectus may be obtained after payment in the following ways:

1. KMU Registrar's office.
2. By sending a written request addressed to the Registrar, Khyber Medical University, Phase V Hayatabad, Peshawar. The prospectus will be delivered to you by email. The envelope, containing the request should be sealed and marked 'MPhil-CD Prospectus'. Please provide your correct address.
3. Alternately the prospectus and application may be downloaded from the university website.

A nonrefundable Admission Test fee will have to be paid as well.

Completed applications should contain the following:

- Domicile Certificate
- Attested photocopy of identity card
- Attested photocopy of matriculation certificate
- 3 passport sized photographs
- Attested photocopy of the intermediate certificate
- Professional resume (preferably one page)
- Final degree certificate along with transcripts
- Attested photocopies of experience certificates

Foreign students must submit attested photocopies of any language proficiency tests taken such as TOEFL. Foreign students must also submit two reference letters from teachers/supervisor or employers

The completed application must reach The Registrar of the University by the closing date. Incomplete applications and application received after the closing date will not be entertained. Government employees can send applications in advance but are required to get their NOC from their respective department to enroll in the program.

## **Admission Procedure**

### **MPhil-CD Admission Committee**

University has its own MPhil-CD admission committee, comprising of the Director, the MPhil-CD Program Coordinator, the Registrar and senior faculty members. The MPhil-CD admission committee is responsible for the selection of applicants to be admitted to the MPhil-CD Program. It establishes a procedure for the timely review of

applications to the program. Deferrals of admission are at the discretion of the MPhilCD admission committee.

### **Final Selection**

The applicant's acceptance is contingent upon all required documents including official transcripts. The MPhil-CD admission committee is responsible for identifying those students with missing documents and/or credentials which do not meet eligibility standards.

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

<b>Criteria</b>	<b>Maximum weightage</b>
Previous academic record score	20%
Admission Test score	40%
Interview score	40%
Total score	100%

The final decision regarding the selection of the candidate rests with MPhil-CD Admission Committee and cannot be contested. **Students offered admission should submit a letter of acceptance to the registrar, within seven days of selection.**

### **Program Duration**

The program will have an annual intake, with a fresh session starting every February for the spring semester. The total duration of the program is four semesters, taking up to two years to complete. The first two semesters will be dedicated to coursework and the last two semesters to research work and thesis writing. The duration of one semester will be 18 weeks. The taught semesters will be arranged as follows:

Week 1 – Week 8: Teaching and training

Week 9: Midterm Exam

Week 10 –Week 17: Teaching and Training

Week 18: Final Exam

### **Medium of Instruction**

The medium of instruction for all courses in the MPhil-CD program will be English. The conduct of courses is the premise of the individual course teacher but generally include lectures, group discussions, seminars, demonstrations, short visits, etc.



## Semester-wise Course distribution and Credit Hours

The distribution of the courses in the four semesters is given in the following tables.

### Semester 1

S NO	Codes	Modules	Credit Hours
1	MPH-702	Basic Epidemiology and Biostatistics	2+1
2	MPhil-CD 706	Oral Epidemiology	1+1
3	MPhil-CD 703	Principles of Dental Public Health	2
4	MPhil-CD 704	Oral Health Promotion and Disease Prevention	2
5	MPhil-CD 705	Primary Dental Care	2
6	MPhil-CD 713*	Introduction to Research Literature	1
<b>Total</b>			<b>12</b>

### Semester 2

S NO	Codes	Modules	Credit Hours
1	MPH 724	Research Methods	2+1
2	MPH 712	Health management and policy	2+0
3	MPhil-CD 708	Ethics and Dental Public Health	2+0
4	MPhil-CD 709	Health Professions Education	2+0
5	MPhil CD- 710	Qualitative Research in Dental Public Health	2+0
6	MPhil CD- 711	Evidence-Based Dentistry	1+0
<b>Total</b>			<b>12</b>

### Semester 3 & 4

S NO	Code	Module	Credit Hours
3 <sup>RD</sup> Semester (3+3)	MHR 714	Applied systematic review and introduction to meta-analysis	2+1
	MHR717	Qualitative Health Research	2+1
	MHR 716	Randomize Control trials	2+1
			Total=6
4 <sup>TH</sup> Semester	MPHIL CD-712	Thesis on oral health related topic	6
			Total 12

### Number of Credits per Semester

Semester I	12
Semester II	12
Semester III	06
Semester IV	06
<b>Total credits for the MPhil-CD Program</b>	<b>36</b>

## Course Description

Following is the detailed description of the MPhil-CD core modules.

### MPhil-CD 703.Principles of Dental Public Health

#### Course Content:

- This course will introduce the students to the core principles of Dental Public Health, and its application to population-based oral health.
- Students will learn the importance of core public health functions, and different public health and dental public health achievements across the globe.
- Disparities in oral health status and access to dental care among underserved populations will be highlighted.
- A brief overview of different dental care delivery systems prevalent across the world and the importance of other dental and non-dental workforce models in improving access to dental care will also be discussed.
- Describe social and health care systems and determinants of health and their impact on the oral health of the individual and population
- Demonstrate the ability to access and describe the use of population-based health data for health promotion, patient care, and quality improvement

#### Course Objectives

At the completion of this course, students will be able to:

1. Identify and describe the principles of public health as it relates to oral health and the dental professional.
2. Describe the public health and dental public health achievements across the globe.
3. Describe the oral health status and needs of different populations, including underserved, marginalized, and minority populations.
4. Describe the dental disease trends among various populations.
5. Identify and explain determinants associated with access and utilization of dental care services.
6. Recognize the roles of public, private, professional and voluntary organizations in promoting oral health, and the delivery of dental health care services.
7. Describe and differentiate between different oral health workforce models.

**Grading:**      Class assignments 10%  
                         Mid-term Exam      20%

**Recommended Reading:**

- Daly B, Watt RG, Batchelor PB, Treasure ET. Essential Dental Public Health. Oxford: Oxford University Press; Oxford, 2002.

**MPhil-CD 704. Oral Health Promotion and Disease Prevention****Course Content:**

- In this course, students will learn fundamental concepts of health promotion and disease prevention and its applications in dental public health.
- Prevention of diseases at the population or community level and at the individual level are presented and compared. Emphasis is on assessment, health promotion and risk prevention related to oral health in the community.
- Epidemiology of caries, periodontal diseases, and oral cancer will be discussed and common dental indices to measure these oral diseases are addressed. Students' explore strategies for prevention of these common oral diseases at the individual and community level including the use of fluorides.
- Students will learn to apply pit-and-fissure sealants and fluoride varnish. Student activities are offered to stimulate discussion and deeper understanding of the complexities facing oral health and dental public health professionals.

Assess risk for oral diseases and select appropriate, evidence-based preventive interventions and strategies to promote health and control oral diseases at the individual and population level.

- Demonstrate the ability to access and describe the use of population-based health data for health promotion, patient care, and quality improvement.

**Course Objectives**

At the completion of this course, students will be able to:

1. Understand the role played by dental professionals in promoting the general health and well-being of their patients and their community.
2. Explain the levels of prevention and the differences between the three levels of prevention.

3. Define and distinguish between health promotion and health education
4. Identify epidemiology, trends, etiology, risk factors, and common dental indices to measure oral diseases and conditions such as caries, periodontal diseases, and oral cancer.
5. Understand and describe oral disease prevention and its application at the community and individual levels

<b>Grading:</b>	Class assignments	10%
	Mid-term Exam	20%
	Final Exam	70%

**Recommended Reading:**

- Rose G. The strategy of preventive medicine [Internet]. 2009 [cited 30 March 2018]. Available from: <https://global.oup.com/academic/product/roses-strategy-of-preventivemedicine-9780192630971?cc=pk&lang=en&>
- Watt RG, Harnett R, Daly B, Fuller SS, Kay E, Morgan A et al. The Oral Health Promotion Evaluation Toolkit. London: Stephen Hancocks Ltd; London, 2004.

**MPhil-CD 709. Health Professions Education**

**Course Content:**

This course will briefly address the teaching needs of the dental public health professionals’.

- It offers a brief overview of the educational psychology, teaching, learning, assessment and curriculum development in dental education.
- Discuss the trends, issues, and challenges in Health Professions Education globally and nationally
- Derive principles based on educational theories to inform teaching and assessment
- Reflect on various strategies for teaching, learning, and assessment in dental education
- Demonstrate skills of an effective teacher, assessor, and feedback provider in different situations.
- Differentiate between various assessment tools for cognitive, psychomotor and affective domain
- Design a curriculum having an alignment of objectives with the teaching, learning and assessment strategies.
- Develop an effective study guide to facilitate students learning in their settings.
- Identify professional development needs as an educator and dental public health professional.

## **Assessment**

**Formative Assessment:** During the contact session through presentations, group discussions, Attendance.

**Summative Assessment:** Two assignments

## **The practical aspects of the module will include**

- Communication Skills
- Classroom simulations
- Introduction to Computer & Internet
- IT Workshop

## **Recommended Reading:**

- Developing a pedagogy of teacher education: Understanding teaching and learning about teaching, John Loughran – 2013m.
- Handbook of Technological pedagogical content knowledge (TPCK )for educators-2008.

## **MPhil-CD 706.Oral Epidemiology**

### **Course Content:**

- This course introduces principles and methods of epidemiologic investigation of infectious and noninfectious oral diseases.
- Illustrates how methods of studies of the distribution and dynamic behavior of infectious and chronic oral diseases in a population can contribute to an understanding of etiologic factors, modes of transmission, and pathogenesis.
- Presents different types of study design, including randomized trials, case-control and cohort studies, and risk estimation and causal inferences.
- Demonstrates the interface between epidemiology and the development of policy.
- Critique, synthesize and apply information from scientific and lay sources to improve the public's oral health;

- Assess risk for oral diseases and select appropriate, evidence-based preventive interventions and strategies to promote health and control oral diseases at the individual and population level
- Develop a capacity for lifelong learning and professional growth in order to provide leadership that utilizes or incorporates principles of dental public health

### **Objectives of the course:**

1. Design a valid epidemiological study.
2. Understand bias in oral epidemiology.
3. Successful conduct of epidemiological research.
4. Understand common research designs used in oral epidemiology
5. Be able to review and critique epidemiological studies.
6. Carry out analysis of data sets.

<b>Grading:</b>	Class assignments	10%
	Mid-term Exam	20%
	Final Exam	70%

### **Recommended Reading:**

- G W. From victim blaming to upstream action: tackling the social determinants of oral health inequalities. - PubMed - NCBI [Internet]. Ncbi.nlm.nih.gov. 2007 [cited 30 March 2018]. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/17244132>
- Daly B, Watt RG, Batchelor PB, Treasure ET. Essential Dental Public Health. Oxford: Oxford University Press; Oxford, 2002.

## **MPhil-CD 707.Oral Health Policy and Advocacy**

### **Course Content:**

The course is designed to provide students with a basic understanding of the legislative process, how laws and policies are developed and implemented across the globe, the impact on oral health policies, and the role of the dental health professional in advocating for and influencing oral health policies.

The course discusses the policies that regulate or affect the provision of oral healthcare. General information will be given about policy issues and delivery systems on the

national level; however, the individual instructor can select and customize the lectures to highlight local policy issues locally and in the international arena.

Demonstrate the ability to access and describe the use of population-based health data for health promotion, patient care, and quality improvement

Demonstrate the ability to communicate and collaborate with relevant stakeholders to advocate for policies that impact oral and general health for individuals or populations.

Demonstrate the ability to participate in inter-professional care across the lifespan of people from diverse communities and cultures

### **Course Objectives**

At the completion of this course, students will be able to:

1. Identify the roles of the dental profession in advocating for optimal oral and general health, including underserved and vulnerable populations.
2. Describe the roles of dental and public health organizations in oral health advocacy.
3. Educate and promote awareness about the importance of oral health to policymakers and regulatory agencies or officials.
4. Describe how laws and policies are developed and implemented.
5. Discuss the policies that regulate or affect the provisions of oral health care, including coverage of dental care and state practice acts.

<b>Grading:</b>	Class assignments	10%
	Mid-term Exam	20%
	Final Exam	70%

### **Recommended Reading:**

- Daly B, Watt RG, Batchelor PB, Treasure ET. Essential Dental Public Health. Oxford: Oxford University Press; Oxford, 2002.
- Delivering better oral health [Internet]. Gov.uk. 2014 [cited 30 March 2018]. Available

from: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/605266/Delivering\\_better\\_oral\\_h](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/605266/Delivering_better_oral_h)



## MPhil-CD 705. Primary Dental Care

### Course Content:

- Students will be taught Primary health care terminology and link to population health, health promotion and the determinants of health.  
Phases of team development, nature of teams, the process of change, managing team meetings, consensus building, understanding the roles of different providers on the PHC team. Identifying new sources of community support and resources, referral practices, nature and levels of partnerships, exploring new partners and strategies for initiating them, critical factors for a successful partnership and assessing partnership effectiveness.
- Summarize the key factors that informed the development of the Primary Dental Care Approach.
- Program planning: key steps, determining program activities, and creating a program profile, a program planning model and an action plan and Evaluation: key steps, key types and creating a basic evaluation framework.
- Explain the key principles of comprehensive primary health care (CPHC).
- Critically analyze the main differences between a selective and a comprehensive approach to primary health care.
- Describe the main features of the district health system.
- Discuss critically the importance of inter-sectoral action and community involvement in health development.
- Identify the key measures of success of PDC, and the barriers to implementation of CPHC on an international level.

### Competencies Addressed:

1. Describe social and health care systems and determinants of health and their impact on the oral health of the individual and population
2. Demonstrate the ability to access and describe the use of population-based health data for health promotion, patient care, and quality improvement

<b>Grading:</b>	Class assignments	10%
	Mid-term Exam	20%
	Final Exam	70%

### Recommended Reading:

- Pine C, Harris R. Community Oral Health: Cynthia M. Pine: 9781850971627 [Internet]. Bookdepository.com. 2007 [cited 30 March 2018]. Available from: <https://www.bookdepository.com/Community-Oral-Health-Cynthia-MPine/9781850971627>

### **The practical aspects of the course will cover**

- Atraumatic Restorative Technique (Lab and patients)
- Fluoride varnishing techniques for primary prevention of Caries.
- Training on Tobacco cessation tool of the WHO.

### **MPhil-CD 708.Ethics and Dental Public Health**

#### **Course Content:**

- This course is designed to introduce the students to ethical reasoning related to the practice of population-based dental public health while contrasting the application of ethical principles and issues to those of the dental practitioner who focuses on the oral health of the individual patient.
- The emphasis is on raising awareness of the professional in recognizing ethical issues, including research ethics, and analyzing them within the framework of the population-based practice.
- Demonstrate the ability to incorporate ethical reasoning and actions that promote culturally competent oral health care to individuals and populations.
- Recognize the similarities and differences in the mission of dental practitioners versus the dental public health practitioner and how to respond to common ethical issues facing each.
- Describe the principles and values underlying public health and dental public health and compare to those for dental practitioners.
- Demonstrate how the Code of Ethics developed for dental practitioners will differ from that for dental public health practitioner.
- Describe and apply a framework for analyzing the decisions and actions to be made by dental public health professionals to the Healthy People 2020 Oral Health Community Interventions.

**Grading:** Class assignments 10%

Mid-term Exam	20%
Final Exam	70%

### Recommended Reading:

Mason J. Concepts in Dental Public Health [Internet]. Amazon.com. 2003 [cited 30 March 2018]. Available from: <https://www.amazon.com/Concepts-Dental-Public-Health-Masonebook/dp/BooAW82WGU>

### MPhil-CD 711.Evidence-Based Dentistry

- This course aims to provide students with the necessary scientific foundation of knowledge and skills required to practice effective “Evidence-based Dentistry.”
- Specifically, students will gain knowledge and skills to form critical questions, locate information, judge the quality of available information, and apply the evidence to clinical decision making and ongoing evaluation in both patient care at the individual level, and oral health promotion and community advocacy at the population level. Students will learn to access relevant scientific literature and conduct searches, and tools and methodology to critique the scientific literature.
- In the seminar/activity component of the course, students meet in small groups led by faculty members who serve as facilitators to complete “case-based” learning activities to formulate good clinically relevant PICO questions and assess the scientific literature to find the best evidence-based answers to those questions.
- Critique, synthesize and apply information from scientific and lay sources to improve the public's oral health;
- Assess risk for oral diseases and select appropriate, evidence-based preventive interventions and strategies to promote health and control oral diseases at the individual and population level
- Develop a capacity for lifelong learning and professional growth in order to provide leadership that utilizes or incorporates principles of dental public health.

### Course Objectives

At the completion of this course, students will be able to:

1. Assess information affecting oral and general health including clinical, basic and behavioral science topics using the available library, online and other resources.
2. Explain the hierarchy of evidence
3. Read, critically evaluate and discuss the dental literature.
4. Describe the advantages and disadvantages of different study designs
5. Identify the appropriate use of common statistics

<b>Grading:</b>	Class assignments	10%
	Mid-term Exam	20%
	Final Exam	70%

**Recommended Reading:**

- Daly B, Watt RG, Batchelor PB, Treasure ET. Essential Dental Public Health. Oxford: Oxford University Press; Oxford, 2002.

Practical aspects of the module will cover

- Conducting searches to identify evidence
- Meta-analyses of the diagnostic accuracy of tests
- Conducting a Systemic Review of Rev Man 5.3

**MPhil-CD 710. Qualitative Research in Dental Public Health**

**Course Content:**

- A systematic understanding and critical awareness of how qualitative research is written up in practice.
- A systematic understanding and critical awareness of key issues around validity, reliability, and sampling in qualitative research; systematic understanding and critical awareness of ethical issues and reflexivity as applied to qualitative research.
- A systematic understanding of the most widely used approaches to qualitative data collections;
- This module aims to provide a comprehensive introduction to key terms and concepts that underpin qualitative research design and analysis, with particular reference to the discipline of health services research and public health.

- Understand qualitative research approaches, methods, and forms of analysis which are relevant to health services research and technology assessment; be able to plan and undertake a simple analysis of student-generated qualitative data; critically appraise the methods and results of qualitative research in health services research.

<b>Grading:</b>	Class assignments	10%
	Mid-term Exam	20%
	Final Exam	70%

Recommended Reading:

- Silverman D. [Internet]. Amazon.com. 2000 [cited 30 March 2018]. Available from: <https://www.amazon.com/Doing-Qualitative-Research-PracticalHandbook/dp/1446260151>

## Module: Introduction to Literature Review

**MPhil-CD 713**      **Credit hours =1**

### Description:

This module emphasizes acquiring skills necessary for MPhil Community Dentistry students to effectively find, recognize, and choose appropriate literature sources to create an annotated bibliography and a well-organized literature review. The learning process involves a combination of classroom instruction and hands-on tutorials.

Schedule & Duration: (Assign credit hours) (Class teaching and hands-on tutorial time assigned)

### Learning Outcomes:

By the end of this module, the MPhil Community Dentistry students should be able to:

- ✓ Explore accessible databases

- ✓ Assess the reliability, partiality, pertinence, and arrangement of sources
- ✓ Recognize key concepts in pertinent sources
- ✓ Integrate data from various sources
- ✓ Create a comprehensive bibliography using a reference management tool
- ✓ Organize and present the literature review in a structured and formatted manner

**Topics details:**

Navigating Databases	Introduction to databases and steps to identify and select relevant sources
Annotated Bibliography	How to compile an annotated bibliography and looking for themes in the literature
Referencing	Introduction and practical use to Reference manager
Integration of references	Integrating source materials and paraphrasing
Structuring the Literature Review	Organizational patterns of literature review: Introduction, sections, and formatting
Writing the Literature Review	Finalizing the literature review: Peer Review, Editing and Submission

## **Objectives:**

1. To develop a sound understanding of basic concepts in Health research and ethics.
2. To describe the steps in development of health research proposal.
3. To develop a research proposal and conduct research following standard guidelines
4. A critical understanding of the main principles of bioethics and how these principles should be applied in research, particularly in conduct of human subject research.
5. To enable students to apply principles and concepts of Health research to identify public health problems and suggest solutions for them.

## **COURSE CONTENT:**

1. Introduction to Health Research & Ethics:
  - Research (Definition. Objectives, types)
  - Health Research
  - Research Ethics
2. Research Process:
  - Steps in Research proposal Development
  - Problem Analysis:
    - Identifying and prioritizing problems for research:
    - Identification of research topic
    - Criteria for prioritizing problems for research
    - Scales for rating research topics
    - Steps in problem analysis
    - Factor diagram
  - Formulation of problem statement (include Background of problem, extent of problem, contributing factors , Justification & application of study)
3. Formulation of Research Question, Hypothesis & Objectives:
  - Definition and characteristics of Research Question, Hypothesis & objectives
4. Literature Review:
  - Importance of literature review during the preparation of a research protocol
  - Resources for literature review
  - Internet searching for literature
5. Introduction to health systems research methodology:
  - Steps in HSR methodology
  - Variables (Definition, types, use in research)
6. Research Designs:
  - Types of studies use in research
  - Qualitative & Quantitative research studies

- Advantages & limitations
- 7. Sampling:
  - Sampling Methods
  - Sampling biases
  - Sample size calculation
- 8. Data collection tools & techniques:
  - Data-collection techniques & tools
  - Uses and limitations of different techniques
  - Bias in data collection and ways of preventing bias
- 9. Data Collection & Analysis:
  - Plan for data collection & processing
  - Statistical methods used in data analysis
- 10. Research and Ethics:
  - Major ethical issues involved in the implementation of research
  - How to deal with ethical issues?

## **SUGGESTED READINGS**

1. Designing and Conducting Health systems research projects. Corllen M. Varkeuisser, Indra Pathmanathan, Ann Brownlee.
2. Health Research Methodology. A Guide For Training In Research Methods. Second Edition

## **PERIODICALS, WEBSITES, ETC:**

1. Lectures uploaded on website: [www.iph.kmu.edu.pk](http://www.iph.kmu.edu.pk)
2. International Journal of Health Research. Website: <http://www.ijhr.org/>
3. Pakistan Journal of Health Research.  
Website; <http://www.linkedin.com/groups/Pakistan-Journal-Health-Research-4731182>

**MPH -702: Basic Epidemiology and Biostatistics:**  
Overall aims of course



This course will cover the methods used in the conduct of epidemiological research and application of epidemiological methods in the community.

**Intended learning outcomes of course (ILOs)**

**a. Knowledge and understanding:**

- i. Demonstrate the role of basic epidemiology and biostatistics in health and medicine.
- ii. Demonstrate the patterns of health and disease in the population in terms of persons, time and place.
- iii. Apply epidemiological research methods for preventive strategies.

**b. Intellectual skills**

- i. Demonstrate the vital statistics of population.
- ii. Demonstrate the epidemiological associations.
- iii. Describe the impact of health disorders upon human populations in quantitative terms

**c. Professional and Practical Skills**

- i. Apply the epidemiological methods to control the diseases in the community.
- ii. Conduct the epidemiological research for Evidence-based decisions.

**d. General and transferable skills**

- i. Apply the epidemiological research to resolve the public health issues.
- ii. Analyze and interpret the epidemiological findings.

**. Contents:**

S No	Topic	No. of Hours	Lectures	Practical
1	Introduction to basic epidemiology	03	2 hrs	1 hr
2	Indices of health and disease	03	2 hrs	1 hr
3	Descriptive study designs case report, case series, cross sectional study	03	2 hrs	1 hr
4	Analytical observational study designs case control study, cohort study	03	2 hrs	1 hr
5	Experimental study designs RCT, Quassi study	03	2 hrs	1 hr
6	Sampling techniques	03	2 hrs	1 hr
7	Measure of association (Odds ratio, Relative Risk)	03	2 hrs	1 hr
8	Measure of association (Population attributable Risk)	03	2 hrs	1 hr

9	Screening Validity, Reliability, Sensitivity, Specificity, PPV, NPV	03	2 hrs	1 hr
10	Introduction to basic biostatistics	03	2 hrs	1 hr
11	Probability	03	2 hrs	1 hr
12	Distribution of data / Measures of central tendency / Measures of spread	03	2 hrs	1 hr
13	Hypothesis testing, errors (alpha & beta)	03	2 hrs	1 hr
14	Estimation Point and Period estimate	03	2 hrs	1 hr
15	Comparing samples	03	2 hrs	1 hr
16	Sample size calculation & Power	03	2 hrs	1 hr

#### 4. Teaching and Learning Methods:

- a. Interactive Lectures
- b. Group work
- c. Presentations
- d. Assignments / self-study
- e. Tutorials
- f. Field visits

#### 5. Student Assessment Methods

- a. **Mid Term Exam** to access student's knowledge and understanding
- b. **Assignments** to access students writing and intellectual skills
- c. **Final Term Exam** to access students command on subject.

#### 6. Assessment Schedule

<b>Assessment 1</b>	<u>Class Exercises (Assignments)</u>	<b>Week</b>	<u>Weekly</u>
<b>Assessment 2</b>	<u>Mid Term Exam</u>	<b>Week</b>	<u>9<sup>th</sup> week</u>
<b>Assessment 3</b>	<u>Final Term Exam</u>	<b>Week</b>	<u>18<sup>th</sup> week</u>

#### 7. Weighting of assessments

Mid-term examination	<u>20%</u>
Final-term examination	<u>70%</u>
Semester work (Assignments)	<u>10%</u>
• Oral Presentations (05%)	
• Weekly Exercises (20%)	
<b>Total</b>	<b>100 %</b>

## 8. Lists of references

- a. Course notes Lectures uploaded on website: [www.iph.kmu.edu.pk](http://www.iph.kmu.edu.pk)
- b. Essential books (text books) Leon Gordis (Principles of epidemiology)- Text Book
- c. Kuzma for Biostatistics- Text Book
- d. Periodicals, Websites,etc
  - i. Lectures will be uploaded on website: [www.iph.kmu.edu.pk](http://www.iph.kmu.edu.pk)
  - ii. American Journal of Epidemiology
  - iii. Journal of epidemiology & community health –BMJ Journals
  - iv. [www.cdc.gov/epideiology/en/](http://www.cdc.gov/epideiology/en/)
  - v. [www.who.int/topics/epidemiology/en/](http://www.who.int/topics/epidemiology/en/)

## 9. Facilities required for teaching and learning

- a. Multimedia with screen
- b. Flip charts
- c. Markers
- d. White board
- e. Full time internet facility

## MPhil-CD712: Thesis

### Course Objectives:

The Master's Thesis represents the culminating experience required for the degree program and may take the form of a research thesis, an evaluation study, or an intervention study. Each student is required to formally present the research experience and research findings in a viva voce or thesis defense.

As a requirement of the program all students are required to develop a research protocol, collect and analyze data and write a thesis. This provides the students an opportunity to gain first-hand experience of conducting a complete research study. Thesis committees supervise the students' research projects. Each thesis committee comprises a thesis supervisor and at least one other faculty member from within the program or within the University. In order to conduct their MPhil-CD thesis research, students are encouraged to seek funds by applying to national and international funding agencies.

The MPhil-CD faculty members possess at least 4 years of relevant teaching/research/professional experience after getting MS/MPhil/PhD or equivalent respective degrees. Therefore, they are eligible to supervise MPhil-CD theses. Once the student successfully completes all the coursework, he/she will be eligible for initiating thesis.

The student is expected to complete the thesis report within 18 weeks of the final semester. It will be the primary responsibility of the supervisor to check the quality standards of the thesis, both proposal and the final report. As per KMU's quality standards, the similarity index, obtained through the use of "Turnitin" software, could not exceed 10%. The template for proposal writing as well as for final report are available on KMU's website. After completion of the final report, the supervisor will sign the report to indicate that he/she has read the proposal/final report. He/She will then recommend a total of four external reviewers that will be randomly chosen by the Vice Chancellor of the university. The Controller of Examinations of KMU will send out the copies of the final report to the two recommended reviewers, who will be bound to send back the reviews within 15 days of the receipt. Based on reviews, the final thesis report will be adjusted by the candidate of MPhil-CD. An internal examiner will be assigned separately from the supervisor whose responsibility will be to ensure that the recommended changes have been made by the candidate. Upon successful incorporation of the changes, verbal defense of the candidate will be arranged by the internal examiner in collaboration with both the supervisor and external examiners. Upon successful defense by the candidate and completion of the required prior coursework, the candidate will be eligible for the receipt of MPhil-CD degree.

**Grading:** Written Thesis and Thesis Defense (Pass/Fail)

### **Academic Quality**

- A course file will be maintained in the Institute for each course. Before the beginning of the classes, each teacher will submit a course plan, including topics to be taught each week, the number of assignments and quizzes, and the distribution of marks. A complete record of the course will be maintained and submitted by the teacher on monthly basis, including attendance, topics covered, home assignments graded, etc. The course director will review course files periodically to ensure that course plans have been followed faithfully.
- The Board of Studies of the department will meet in the first week of every semester to review the examination papers of the Final Exam and student performance for the previous semester. The Board will also approve the course plans for the new semester.
- Since the semester system requires close and continuous interaction between student and teacher, class strength should not exceed 30 students. In case of higher enrollment, students will be divided into sections and all necessary extra facilities will be provided.
- A student must have attended at least 75% of the classes held in a course in order to be allowed to sit in the Final Examination.
- Each course will be assigned a Teaching Assistant (TA) for grading assignments and quizzes, taking tutorial classes for weak students, and in general, helping the teacher in conducting the course. The TA should be a Lecturer or Assistant Professor of the University. Teaching Assistants may also attend their relevant course lectures to keep abreast with the subject.

### **Examination and Methods of Assessment**

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

- Continuous assessment which includes short quizzes, tests, class and home assignments, class participation, interactive discussions, practical exercises and/or group work depending on the course outline. These assessments will be weighted towards 25% of the total grade for the course.
- The mid-term exam will be graded for 25% of the total grade for the course. The mid-term results will be announced within a week and the students will get an opportunity to know their progress in the course. If students are weak in the subject, they may discuss with the course instructor and seek additional help from teaching assistants for the course.

- For the Final Examination, the class teacher will prepare two question papers in the University approved format and submit these to the Course Director of the Institute in a sealed envelope. The Course Director will forward these papers to the University Examination Section. By random selection, the Final exam question paper will be issued by the University Exam Section. The final exam will be weighted towards 50% of the total grade for the course.
- The format of paper for both the mid-term and final exam will include:
  - Paper A:MCQs: 150
  - Paper B: Short Questions: 10
- If a student fails the mid-term exam, the student needs to discuss his/her standing in the course with the course instructor. The course instructor will advise the student on coping strategies to improve the grade in the final exam.
- If a student fails in the final exam, and the overall grade is a D, the student needs to repeat the course. However, the student may discuss with the course instructor who may give an incomplete grade for the course and may instruct the student to do some additional assignments to improve and gain a passing grade.

### Grading

- Grading of students will be through letter grades as defined in Table 1. Grades will be assigned by the course instructor. The course instructor will sign and submit the grades to the course coordinator, who will forward the same to the Director of the Public Health Institute. The Director will then forward them to the Controller of Examination at the University. The numerical scoring in the continuous assessment, mid-term exam and final exam will be converted to a letter grade and grade points as follows:

Table 1: Grade Points

Numerical Score (in percent)	Letter Grade	Grade Points
$\geq 85$	A	4.0
79-84	B+	3.0
70-78	B	2.0
60-69	C	2.0
$< 60$	F	0.0
	I	Incomplete
	W	Withdrawn

- Students receiving an F grade in any course will have to repeat the course whenever it is offered again. A student obtaining a D grade in the course may also

repeat that course, if necessary to improve his/her cumulative grade point average (CGPA). In case of repeated courses, all grades earned by the student will appear in the Transcript/Detailed Mark Certificate (DMC); however, only the latest grade will be counted in calculating the CGPA. If a large number of students fail a course, that course may be offered again during the Summer Semester.

- Grade I (Incomplete) should be awarded to a student only if he/she has missed the Final Examination, Project Report Submission, Thesis Defense, etc., due to genuine reason, but has completed all the other work of the course successfully. The award of grade I should not cover a student's lethargic attitude, willful absence, or bad performance in class. Grade I should be converted to an appropriate letter grade by the end of the next semester, otherwise, it would stay permanent and the student will have to repeat the course. The course instructor concerned should specify the conditions for conversion of grade, in the Grade Conversion Form (FORM-GCF) to be supplied by the Controller of Exams at the University, and explain the same to the student while assigning grade I.
- The Grade Point Average (GPA) for a semester will be calculated as:

Quality Points of each course = Grade Points of grade awarded x Course credit hours

GPA = Sum of Quality points of all courses / Total credit hours

An example of the GPA calculation for a generic semester in the MPhil-CD program is given in Table 2.

Table 2: Example of GPA calculation for a semester

Course Code	A	B	C	D	E
	Credit Hours	Numerical Score	Letter Grade	Grade Points	Quality Points
A x E					
MPhil-CD 701	87	A	4.0	12	
MPhil-CD 703	3	76	B	3.0	9
MPhil-CD 704	3	70	C	2.0	6
MPH 705	3	84	B	3.0	9
Total	12				36

$$\text{GPA} = 36 / 12 = 3.0$$

- The Cumulative Grade Point Average (CGPA) will be calculated over all courses taken to date in a similar manner. In case a course is repeated, all grades will be reported on the transcript; however, only the latest grade will be used to calculate the GPA.
- The practicum report, the written thesis, and the thesis defense will be graded as pass or fail. The pass or fail grade will not be counted towards the calculation of the GPA or the CGPA.
- Students at the Masters level are expected to maintain a CGPA of 2.5 during the course of study.
- A student who obtains a GPA of less than 2.5 for two consecutive semesters will be issued a warning letter from the Director.
- A student who has more than one F grade from the first semester still outstanding at the end of the third semester will not be registered for the fourth semester until he/she clears these courses.