

Department of Community Medicine
Hamdard Institute of Medical Sciences and Research
Jamia Hamdard, New Delhi, India

Course and Curriculum
MASTER OF PUBLIC HEALTH
2021-22

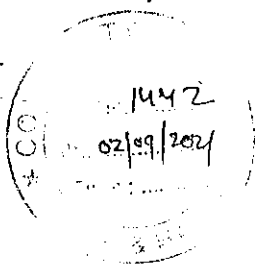
(Approved by BOS)



HIMSR

Hamdard Institute of Medical Science & Research

Dr Farzana Islam
Prof & Head
Dept. of Community Medicine
HIMSR, Hamdard Nagar, New Delhi



DEPARTMENT OF COMMUNITY MEDICINE

HAMDARD INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

Date: 01.09.2021

Minutes of Meeting

A meeting of board of studies was held in Department of Community Medicine on 01.09.2021 at 03:00 PM to discuss about the curriculum of MBBS, MD Community Medicine, MPH & Ph.D. courses running in the department. The following members attended the meeting:

- | | | |
|-------------------------|---|-----------------|
| 1) Prof Farzana Islam | : | Chairman |
| 2) Dr. Sushovan Roy | : | Member |
| 3) Dr Aqsa Shaikh | : | Member |
| 4) Dr Varun Kashyap | : | Member |
| 5) Dr. Yasir Alvi | : | Member |
| 6) Prof. Rambha Pathak | : | Co-opted Member |
| 7) Prof. Najam Khalique | : | Co-opted Member |

The following agendas were discussed in the meeting.

1. MBBS (CBME) curriculum
2. MD, Community Medicine (CBME) curriculum
3. Ph.D. in Public Health (Revision of curriculum)
4. MPH (Revision curriculum)

Minutes of the Meeting:

The Board of Studies deliberated upon the course curriculum of MBBS (CBME based), MD (CBME based), MPH & Ph.D. in Public Health running under the Department of Community Medicine, HIMSR.

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DEPARTMENT OF COMMUNITY MEDICINE
HAMDARD INSTITUTE OF MEDICAL SCIENCES AND RESEARCH

Date: 01.09.2021

ATTENDANCE OF THE MEETING

A meeting of board of studies was held in Department of Community Medicine on 01.09.2021 at 03:00 PM to discuss about the curriculum of MBBS (CBME), MD (CBME) Community Medicine, MPH & Ph.D. courses running in the department.

The following members attended the meeting:

S.N.	Name of the Member	Designation	Signature
01	Prof Farzana Islam	Chairperson	
02	Dr. Sushovan Roy	Member	
03	Dr Aqsa Shaikh	Member	
04	Dr Varun Kashyap	Member	
05	Dr. Yasir Alvi	Member	
06	Prof. Rambha Pathak	Co-opted Member	
07	Prof. Najam Khalique	Co-opted Member	
08	Dr. Faheem Ahmed	Faculty	
09	Dr. Richa Gautam	Faculty	
10	Dr. Archana Thakur	Faculty	

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Background of the course

A Masters of Public Health (MPH) degree provides a comprehensive curriculum that trains students to protect and improve the health of entire populations. Through emphasis on the practical aspects of public health, it prepares them to take on the challenging issues that affect communities, work with people across sectors, and educate the community about preventing disease, prolonging life and promoting health and provide evidenced based advice for healthy living.

Goal

The broad goal of the teaching students of MPH is to prepare them to function as public health practitioners having the knowledge and skills to improve community health for sustainable development.

Objectives:

- To impart knowledge on methods of disease prevention and health promotion
- To develop skills in Policy planning and to address public health challenges
- To develop analytical and assessment skills for collecting and interpreting information and understand the impact of public health policies on health status and indicators
- To develop ability to design and implement strategies to enhance public health and strengthen the health systems
- To impart skills for conducting research in public health to enhance evidence-based decision making
- To nurture communication skills for advocacy, dissemination and evaluation of public health data and information
- To understand financial planning and management skills for running public health programs in the country
- To nurture the leadership skills

Specific to the course content, successful candidates are expected to demonstrate the following competencies in a Public Health setting:

1. **Apply the course learning to the public health system and its challenges:**
 - a. Demonstrate adequate knowledge and skills to a wide range of public health topics
 - b. Critically conduct the situational analysis and develop action plan for identified public health issues

- c. Develop workforce for taking public health related responsibilities in defined geographical areas
- d. Develop an understanding of the epidemiological transitions of programs specific to each State within the country in order to prioritize public health challenges for policy making

2. Develop, implement and evaluate key public health policies:

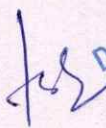
- a. Develop a capacity to apply conceptual framework to understand policy processes in health care
- b. Understand roles of supply and demand in policy making in health care
- c. Develop an understanding to facilitate inter-sectoral coordination and public private partnership
- d. Critically analyse resource allocation for competing public health interests across programs
- e. Formulate context appropriate policies and design programs to address public health challenges, effectively

3. Develop and demonstrate competency in managing health systems at different levels:

- a. Identify immediate and long term health program goals at national, State and district levels
- b. Prioritize health issues in population
- c. Describe various managerial information systems and their application
- d. Describe program management plans in health
- e. Understand and apply core management principles for human resources in health
- f. Understand and apply program budgeting and economic evaluation
- g. Understand and apply quality assurance and improvement techniques in health care

4. Develop competency in research:

- a. Understand and apply ethical principles in research, evaluation and dissemination
- b. Develop competence to critically evaluate existing information and identify gaps


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- c. Formulate and test research hypotheses in real world scenario
- d. Translate research knowledge for evidence based policy making

Eligibility Criteria for the Masters in Public Health Program at HIMSR:

Hamdard Institute of Medical Sciences and Research (HIMSR) being among top medical colleges in India, we want to nurture physicians and health graduates into public health practitioners. The eligibility criteria for the MPH Program includes

- **Essential:**

A Bachelor's degree in following streams from any UGC recognize university in the country or abroad.

- Medicine
- AYUSH
- Dentistry
- Veterinary Sciences
- Physiotherapy
- Nursing
- Other Allied Health Sciences

- **Desirable:**

Demonstrated work experience in a healthcare-related field is highly desirable.

Total No. of seats: 10 (Ten)

Criteria for admission:

- A minimum of 55% overall marks in graduation (extra 5% relaxation for MBBS could be considered till 50%)

Duration of the course:

This course is designed to be a two years full time program including internship and dissertation.

Course outline

The MPH course will comprise of 15 Core modules and five elective modules which may be offered by Universities depending on their capacity and capability. A candidate will need to pass all 15 Core (compulsory) modules, and all sub-modules of any one of the elective streams to successfully complete the program.



A. Core modules (compulsory for all four streams)

1. Principles and practice of Public Health
2. Basic Epidemiology
3. Basic Biostatistics
4. Environment and occupational health
5. Introduction to health programme evaluation
6. Principles of social research methods
7. Demography and population sciences
8. Reproductive, Maternal, Neonatal, Child Health and Adolescent Health (RMNCH+A)
9. Health Management: Management Principles and practices
10. Introduction to health economics
11. Introduction to financial management and budgeting
12. Introduction to health system and policy in Developing countries
13. Social and behaviour change, effective communication in health care
14. Health promotions approaches and methods and evaluation
15. Law and Ethics in Public health

B. Elective streams (Any one)

1. Epidemiology

- i. Advanced Biostatistics
- ii. Advanced Epidemiology
- iii. Survey design and methods
- iv. Communicable disease epidemiology
- v. Non communicable disease epidemiology

2. Reproductive and child Health

- i. Sexual and Reproductive health
- ii. Maternal, child health
- iii. Adolescent health
- iv. Public health nutrition
- v. Gender

3. Disaster Mitigation

- i. Introduction to Disaster Management & Mitigation:
- ii. Impact of a disaster, Types of disaster:
- iii. National Disaster Management Act:
- iv. Role of NDMA and Public Health Expert during Disaster and the expectations
- v. Challenges and barriers in the mitigation strategies & Bioterrorism

4. Global Health

- i. Global Health in 21st century
- ii. Global Health issues
- iii. Global Health Programs and Policy

- iv. Global Health : Communication, economics and
- v. Ethics, equality and equity

5. Nutrition

- i. Basics and Physiology of Nutrition
- ii. Malnutrition,
- iii. Food fortification, Food poisoning and intoxication.
- iv. Dietary Surveys and methods for nutritional assessment
- v. Nutritional Programmes & Policies

Note: All modules (i) to (v) are compulsory for individual Elective streams

C. Internship

D. Dissertation

COURSE CREDITS & TEACHING HOURS

S No.	COURSE	Proposed teaching Hours
A	CORE MODULES	
1.	Principles and practice of Public Health	50
2.	Basic Epidemiology	100
3.	Basic Biostatistics	100
4.	Environment and occupational health	50
5.	Introduction to health programme evaluation	50
6.	Principles of social research methods	100
7.	Demography and population sciences	50
8.	Reproductive, Maternal, Neonatal, Child Health and Adolescent Health	50
9.	Health Management: Management Principles and practices	25
10.	Introduction to health economics	25
11.	Introduction to financial management and budgeting	100
12.	Introduction to health system and policy in Developing countries	50
13.	Social and behaviour change, effective communication in health care	50
14.	Health promotions approaches and methods and evaluation	50
15.	Law and Ethics in Public health	50
B	ELECTIVE MODULES	
B1	Epidemiology	
i.	Advanced Biostatistics	30
ii.	Advanced Epidemiology	30
iii.	Survey Design and Methods	30
iv.	Communicable disease epidemiology	30
v.	Non communicable disease epidemiology	30

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OR		
B3	Reproductive and child Health	
i.	Reproductive and Sexual Health	30
ii.	Maternal and child health	30
iii.	Adolescent Health	30
iv.	Gender and Health	30
v.	Public Health Nutrition	30
OR		
B3	Disaster Mitigation	
i.	Introduction to Disaster Management & Mitigation:	30
ii.	Impact of a disaster, Types of disaster:	30
iii.	National Disaster Management Act	30
iv.	Role of NDMA and Public Health Expert during Disaster and the expectations	30
v.	Challenges and barriers in the mitigation strategies & Bioterrorism	30
OR		
B4	Global Health	
i.	Global Health in 21 st century	30
ii.	Global Health issues	30
iii.	Global Health Programs and Policy	30
iv.	Global Health : Communication, economics and ethics	30
v.	Ethics, equality and equity	30
OR		
B5	Nutrition	
i.	Basics and Physiology of Nutrition	30
ii.	Malnutrition,	30
iii.	Food fortification, Food poisoning and intoxication	30
iv.	Dietary Surveys and methods for nutritional assessment	30
v.	Nutritional Programmes & Policies	30
	TOTAL FOR ELECTIVE MODULE	150
	INTERNSHIP AND DISSERTATION	
C	Internship	150
D	Dissertation	250
	Total (Core modules+one elective stream+Internship+Dissertation)	1600

Credit hours and teaching hours of each module would be based on guidelines issued by Hamdard University.

Semester Distribution of MPH Program along with organization of modules

Semesters	Months	Modules	In/out Campus	Evaluation
Semester 1	6 months	1. Principles and practice of Public Health 2. Basic Epidemiology 3. Basic Biostatistics 4. Environment and occupational health 5. Introduction to health programme evaluation	In campus classes	Internal
Semester 2	4 months	1. Principles of social research methods 2. Demography and population sciences 3. Reproductive, Maternal, Neonatal, Child Health and Adolescent Health (RMNCH+A) also to include Family Planning	In campus classes	Internal
	2 months	Internship		
Semester 3	6 months	1. Health Management: Management Principles and practices 2. Introduction to health economics 3. Introduction to financial management and budgeting 4. Introduction to health system and policy in Developing countries 5. Social and behaviour change, effective communication in health care 6. Health promotions approaches and methods and evaluation 7. Law and Ethics in Public health	In campus classes	Internal
Semester 4	4 months	Dissertation		
	2 months	Any one Electives	In campus classes	Internal

Teaching and credit hours would be based on guidelines issued by Hamdard University

Holidays and breaks will be as per rules of Jamia Hamdard.

Learning & Examination Regulations:

1. Learning activities

A candidate pursuing the MPH degree will be in the institution as a full time student. Every candidate will take part in seminars, group discussions, journal review meetings etc. Each semester will be considered as a unit for the purpose of calculating the attendance. No candidate will be permitted to run a clinic/ laboratory/ nursing home while studying.

For practical knowledge and in depth learning, field visits at Anganwadi, Primary Health Center, District Health Office, HAHC Hospital, water treatment plant, non-government organisation, etc and field activities including School Health Program, Health Education talks and surveys, etc, would be undertaken by all the students. Every student will attend teaching and learning activities during each year as prescribed by the department and not absent himself/ herself from work without valid reasons

2. Attendance:

Attendance of 75% (physical presence) is mandatory. Medical leave or other types of sanctioned leaves will not be counted as physical presence. For those who possess a minimum of 70% attendance, deficiency up to 5% may be condoned on medical or other genuine grounds by the Dean, HIMSR at his/her sole discretion and as per the recommendation of the Faculty concerned.

Condonation fee as decided by the university has to be paid. Attendance will be counted from the date of commencement of the semester to the last day of the final examination in each subject. Absence without prior permission will be viewed seriously.

3. Dissertation

The dissertation is aimed to train the student in research methodology. It includes identification of the problem, formulation of a hypothesis, review of literature, designing of research study, collection of data, comparison of results and drawing conclusions.

Dissertation will require approval of the Institutional Ethical Committee (IEC) prior to initiation of any dissertation work. Students will work under the Supervisor to obtain IEC approval.

Every candidate will submit a synopsis of the intended project work through the proper channel (Supervisor/Guide, Head of the department and Head of the Institution) prior to their first year University examination.

4. Student Assessment

- Internal assessment will be conducted for all core modules .
- Failure to attend an assessment will not be compensated for by substitution/replacement or in any other way and the mark for that assessment will be zero.

- Assignments that are submitted according to the instructions of the concerned faculty alone will be accepted for grading.
- Any work submitted after the deadline will not be considered for evaluation.
- Students found plagiarizing in assignments will be given zero marks.
- While evaluating an assignment, if any faculty finds that the student has copied the assignment from another source, the concerned faculty will be sent a report to the Head of the Department along with the assignment and a copy of the original source and the decision of the faculty committee on the matter will be final.

a) Internal Assessment:

- Regular periodic assessment shall be conducted throughout the course as decided by the faculty. Day to day assessment will also be given importance during internal assessment. Students need to have at least 50% of internal assessment in each module to sit for university examination.

b) Promotion between semester

- The student will be promoted from first semester to second semester on the basis of internal assessment. Similarly they will be promoted from third to fourth semester on the basis of internal assessment of the third semester. Students need to have at least 50% of internal assessment in each module to be eligible for promotion.

c) University Examination:

- University examination will comprise of theory, practical and viva. In addition, the final exam will also have defence of dissertation.
- Examination shall be conducted annually at the end of second and fourth semesters. Those students, who did not clear the university examination, need to re-appear the Supplementary examination after 6 months. Students need to clear first university examination before attending the second university examination. However, they can continue with their second year classes.
- If a student fails in any module in the first university exam at the end of second semester, he may attend classes next semester but would not be eligible for the final exam if he has not cleared all modules in first university examination.
- A candidate who satisfies the requirement of attendance & internal assessment as stipulated by the University shall be eligible to appear for the University Examination.
- Students who have not completed their project successfully will not be permitted to appear for second year university examination.
- One academic year will be twelve months including the days of the Examination. Year will be counted from the date of commencement of classes.
- For the final examinations external will be invited for evaluation of students along with internal examiners.
- The minimum pass for internal assessment and for the University Examination is 50%.

If a candidate fails he/she has to reappear for the failed papers and clear it. Maximum number of attempts permitted for each university exam is three (3) including the first attempt.

If a candidate fails in a particular theory/ practical examination of a core module, he/she must rewrite both the theory and practical of that particular core suite.

Dissertation evaluation: Evaluation should be done by eligible external examiners.

The dissertation, viva-voce and defence will be valued together by the examiners appointed by the university. The viva-voce and defence examination will be held after the submission of dissertation. If a candidate fails to submit the dissertation on or before the date prescribed, his/her viva-voce and defence will be conducted during the subsequent university examination.

A candidate must have passed in all subjects to become eligible to get the MPH degree, for the candidates who have not passed all the subjects the duration of the two year shall be extended until and upto five years they become eligible to get the degree.

Scheme of Examination:

Year	Paper code	Module	Marks percentage of CBA			
			IA	Theory	Practical & Viva	
First year	PH101	Principles and practice of Public Health	25%	50%	25%	100%
	PH102	Basic Epidemiology	25%	50%	25%	100%
	PH103	Basic Biostatistics	25%	50%	25%	100%
	PH104	Environment and occupational health	25%	50%	25%	100%
	PH105	Introduction to health programme evaluation	25%	50%	25%	100%
	PH201	Principles of social research methods	25%	50%	25%	100%
	PH202	Demography and population sciences	25%	50%	25%	100%
	PH203	Reproductive, Maternal, Neonatal, Child Health and Adolescent Health	25%	50%	25%	100%
	PH210	Internship	25%	-	75%	100%
	Second year	PH301	Health Management: Management Principles and practices	25%	50%	25%
PH302		Introduction to health economics	25%	50%	25%	100%
PH303		Introduction to financial management and budgeting	25%	50%	25%	100%

	PH304	Introduction to health system and policy in Developing countries	25%	50%	25%	100%
	PH305	Social and behaviour change, effective communication in health care	25%	50%	25%	100%
	PH306	Health promotions approaches and methods and evaluation	25%	50%	25%	100%
	PH307	Law and Ethics in Public health	25%	50%	25%	100%
	PH410	Dissertation	-	-	100%	100%
	PE4B1*	Advanced Epidemiology	25%	50%	25%	100%
	PE4B2*	Reproductive and child Health				
	PE4B3*	Disaster Mitigation				
	PE4B4*	Global Health				
	PE4B5*	Nutrition				

Any one*

Marks of each module will be based on the credit hours according to the university guidelines.

Importance of Professionalism, values and communication: During orientation week, the course is expected to provide the candidate an overview of professionalism, importance of professional values and communication including;

- . Professional values- Integrity, objectivity, professional competence and confidentiality.
- . Core values- Accountability, Altruism, Compassion/ caring, excellence, integrity, professional duties, social responsibility
- . Personal values- ethical or moral values
- . Attitude and behaviour- professional behaviour, treating people equally
- . Code of conduct, professional accountability and responsibility, misconduct
- . Cultural issues in the healthcare environment
- . Differences between the various healthcare professions and importance of team efforts
- . Entry level health care practitioner, direct access, autonomy in profession, practitioner of medical practice and evidence based practice

SYLLABUS OF MPH AT HIMSR

A. CORE MODULES (COMPULSORY)

1. Principles and practice of Public Health

- . Health and Public health
- . Health, its determinants and public health
- . The science and practice of public health
- . History of public health
- . Concept of wellbeing and disease
- . National history of disease
- . Health equity
- . Environments and health introduction
- . Public Health action
- . Organization of the public health system in India

Suggested Reading:

- . Oxford textbook of Global Public Health Ed. Roger Detels, James Mcewen, Robert Beaglehole, and Heizo Tanaka Oxford University Press (OUP) 4th Edition: 2002.
- . Park K. Park's textbook of preventive and social medicine. 2021, 26th ed. Jabalpur: Banarsidas Bhanot Publishers.
- . Editorial (1985): "The Distinction between Public Health and Community/Social/Preventive Medicine". Journal of Public Health Policy, December.

2. Basic Epidemiology

Epidemiology

- . History of Epidemiology
- . Measurements in Epidemiology
- . Incidence and prevalence
- . Causation and association
- . Measures of association
- . Outline of study designs (including cross sectional study design, case control study design, cohort study design and randomised control trials)
- . Introduction to confounding and bias
- . Screening tests- validity and reliability methods

- . Disease surveillance
- . Outbreak investigation

Practical activity:

- . Planning and investigation of an epidemic of communicable diseases in a community setting.
- . Secondary data analysis at State level
- . Secondary data analysis with appropriate qualitative research (FGD,etc.)
- . Short epidemiological study

Diseases of Public Health Importance

Communicable disease

- . Respiratory diseases
- . Intestinal infections
- . Arthropod borne infections
- . Zoonotic Diseases
- . Neglected tropical disease

Non- Communicable disease

- . Cardiovascular diseases
- . Diabetes
- . Blindness
- . Accidents
- . Cancers
- . Mental illness

Field Work

- . Outbreak investigations
- . Infectious disease epidemiology
- . NCD and injury epidemiology

Suggested Reading:

- . Oxford textbook of Global Public Health Ed. Roger Detels, James McEwen, Robert Beaglehole, and Heizo Tanaka Oxford University Press (OUP) 4th Edition: 2002.
- . Gordis Epidemiology (Sixth edition), Elsevier Saunders, 2016
- . Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition. Ed Robert Wallace, 2008: The McGraw-Hill

- Park K. Park's textbook of preventive and social medicine. 2021, 26th ed. Jabalpur: Banarsidas Bhanot Publishers.
- Basic epidemiology / R. Bonita, R. Beaglehole, T. Kjellström. 2nd edition, WHO. 2006
- Aschengrau, A., & Seage, G. R. (2013). Essentials of epidemiology in public health. Jones & Bartlett Publishers.
- Park K. Park's textbook of preventive and social medicine. 2021, 26th ed. Jabalpur: Banarsidas Bhanot Publishers.
- Epidemiology the Basic Science of Public Health a MOOC (Massive Open Online Course) developed by coursera.
- Principles of Epidemiology in Public Health Practice. Third Edition. An Introduction to Applied Epidemiology and Biostatistics. Centers for Disease Control and Prevention (CDC)

3. Basic Biostatistics:

- Introduction to biostatistics: Descriptive and Inductive statistics
- Describing data: Variables: Nominal, Ordinal and Interval scale variables. Measures of central tendency: Mean (arithmetic, geometric, harmonic) Median, Mode; Merits and demerits of different measures. Measures of dispersion: Range, Variance, Standard Deviation; Merits and demerits of different measures of dispersion. Measures of Skewness and Kurtosis; Graphical presentation of data
- Introduction to the concept of probability, events; exhaustive, mutually exclusive events; laws of probability, additive and multiplicative laws of probability and its properties
- Discrete probability distributions: Binomial probability distribution and Poisson distribution and their properties. Continuous probability distribution. Introduction to normal distribution and its properties
- Sampling methods: Type of sampling, Probability sampling, Non-probability sampling, sample size determination
- Central limit theorem, Bayes theorem
- Concepts in Inductive statistics: Population, sample parameter, and statistic. Sampling distribution of mean and standard error. Statistical hypothesis, critical region, level of significance, and two types of errors and power calculation. P-value and 95% confidence Interval
- Test of Significance: T-test for small samples and tests based on normal distribution for large samples. Testing the association of attributes and Chi-square goodness of fit
- Nonparametric tests: One sample test, two sample tests, linear regression, multiple linear regressions, one-way ANOVA and two-way ANOVA
- Correlation: Concept of correlation, Pearson correlation coefficient, and its properties; Spearman ranks correlation coefficient
- Basics of regression

Biostatistics: Practical

- . Introduction to statistical software (SPSS/Stata)
- . Working with data: Computing variables, recoding variables, sorting data, grouping data, ensuring quality of data
- . Exploring data: Descriptive statistics, Frequencies, compare means, frequency tables and crosstabs, multiple response analysis
- . Analysing data: Pearson correlation, The Chi-Square Test of Independence, comparing means: One sample t tests, Paired t tests, Independent samples t tests, and One-way ANOVA
- . Multivariate analysis: Linear regression, logistic Regression analysis

Suggested reading:

- . Medical Biostatistics, Indrayan Second Edition. Chapman & Hall/CRC Taylor & Francis Group
- . PDQ Statistics- Geoffrey R. Norman & David L. Streiner. 2003. 3rd edition. BC Decker Publisher
- . Andy Field: Discovering statistics using IBM SPSS statistics. Sage publication 5th edition
- . Mahajan's Methods In Biostatistics For Medical Students And Research Workers (2018) Ed. Bratati Banerjee. Jaypee publication

4. Environment Health Science

Environment

- . Environmental in a national context
 - . Water in relation to health and disease.
 - . Air pollution and ecological balance.
 - . Housing and health.
 - . Effects of radiation on human health (Ionizing, Non-ionizing & Nuclear warfare)
 - . Effects of Noise on human health.
 - . Meteorological environment including effects of global warming.
 - . Effects of heat and cold
- . Ecosystems in various settings (linking the built environment, transport, housing and green space to human health)
- . Sanitation
- . Climate Change & Health
- . Biomedical Waste Management
- . Management of environmental hazards, natural disasters
- . Central Pollution Control Board (CPCB) guidelines

- . Environmental health impact assessment
- . Medical entomology: Arthropods of medical importance and their control
- . Insecticides, pesticides and their application

Occupational Health

- . Occupational Hazards- scope and prevention
- . Pneumoconiosis
- . Lead Poisoning
- . Occupational Cancers & Dermatitis
- . Occupational Hazards of Agricultural Workers
- . Accidents in Industry
- . Sickness Absenteeism
- . Ergonomics
- . Problems of Urbanization & Industrialization
- . Laws related to occupational health;
- . ESI & other schemes for working population in India

Practical activity:

- . Visit: to BMW site
- . Models in department museum
- . Observing Integrated Vector Management activities
- . Visit to ESI hospital

Suggested reading:

- . Park K. Park's textbook of preventive and social medicine. 2021, 26th ed. Jabalpur: Banarsidas Bhanot Publishers.
- . Textbook Of Occupational Health. Ranabir Pal, Sumeet Dixit, Amrita Ghosh, Jugal Kishore, 2020, Century Publications ISBN : 9788188132973
- . Oxford Handbook of Occupational Health (2 ed.). Edited by Julia Smedley, Finlay Dick, and Steven Sadhra. Oxford University Press. 2013

5. Introduction to health programme evaluation

Health Programmes in India

- . Various national programs in India and their critical analysis
- . The origin, historical development, interventions, current state and critique of the different National Health Programmes-
 - . National Health Mission
 - . National water supply and sanitation programme
 - . National Mental Health Programme

- . National program for control of cancer diabetes cardiovascular disease and stroke
- . National programme for the control of blindness
- . National Tuberculosis Elimination Programme
- . National Leprosy Eradication programme
- . National Vector borne Disease Control Programme
- . National AIDS control Programme

Practical activity:

- . Case Study: how to integrate a package of care for a specific problem into a platform of healthcare delivery
- . Family study: Dietary assessment
- . Field Activities: School Health Program, Health Education talks and surveys,

Suggested reading:

- . National Health Program of India, National Policies And Legislations Related To Health,. Jugal Kishore. 13 ed. :2019. Publisher: Century Publications
- . Rao, K. S. (2016). Do we care?: India's health system. Oxford University Press.

6. Research Methods:

- . Objectives of research
- . Research design
- . Ethical issues in research
- . Tools and Measurements in research
- . Sample size and sampling
- . Understanding and analysis of

Qualitative data and research

- a) Ethnography
- b) Grounded Theory
- c) Case Study analysis
- d) Narrative Approaches
- e) Phenomenological Analysis
- f) Community-based Participatory Research
- g) Content Analysis
- h) Discourse Analysis

Quantitative data and research

- a) Demographic Methods
- b) Epidemiological Designs
- c) Meta analysis and systemic review
- d) GIS Mapping and other IT uses in health research
- d) Bio-statistics
- . Mixed methods
- . Public health surveillance and research
- . Preparing research protocol and proposal
- . Research grant
- . Operational Research

Practical activity:

Written Assignment: Identify a research topic and develop a research proposal on a subject of your choice using the understanding derived from the course.

Suggested reading:

- . Health Research Methodology: A guide for training in research methods. Second Edition. WHO, 2001.
- . Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New Age International. 418p.
- . ICMR, 2016 Ethical Guidelines for Biomedical Research on Human Participants, ICMR, New Delhi.
- . Research Methods in Community Medicine: Surveys, Epidemiological Research, Programme Evaluation, Clinical Trials, Sixth Edition. J. H. Abramson and Z. H. Abramson © 2008 John Wiley & Sons
- . MacMahon B and Trichopoulos D. (1996). Epidemiology: Principles and Methods, 2nd ed., Little Brown and Company, Boston, Chapter 1.
- . Alliance for Health Policy and Systems Research (2007). What is health policy and systems research and why does it matter? WHO and AHPSR.
- . Basic course in Biomedical Research, MOOC. NPTEL & National Institute of Epidemiology

7. Demography and population sciences

- . Introduction to population and health. Concept of demography, Population components, Demographic transition theory
- . Factors affecting population, Population composition: Levels and trends in the sex and age structure of the population of world and developed and developing countries
- . Measures of fertility and mortality
- . Sources of demographic and Health data: Population census, Vital registration system, Sample Registration System, NFHS, DLHS, AHS, etc
- . Standardisation methods
- . Population growth and projection
- . Demographic transition
- . Implication of rapid population growth
- . Demographic dividend or disaster
- . Public Health and Aging
- . Life table
- . Urbanization
- . Population policy
- . Contraceptives methods
- . Family planning

Suggested reading:

- . Registrar General of India, Census of India -2011, Ministry of Home Affairs, Govt. of India.
- . United Nations, World Population Ageing, 1950-2050
- . Principles of population Studies: Asha Bhende and Tara Kanitkar, Himalaya Pub, Houses, Mumbai, 2011
- . Galea Sandro, David Vlahov. Handbook of urban health. Populations, methods and practice. USA: Springer publication 2008
- . World Health Organization. Hidden cities: unmasking and overcoming health inequities in urban settings. WHO and United Nations Human Settlements Programme. 2010. ISBN 978 92 4 154803 8 (WHO)
- . Albert S.M.2014. Public Health and Aging: An Introduction to Maximizing Function and Well-being. USA: Springer publication

Park K. Park's textbook of preventive and social medicine. 2021, 26th ed. Jabalpur: Banarsidas Bhanot Publishers.

Murray, C. J. L., (1994): Quantifying the Burden of Disease: The Technical Basis for Disability Adjusted Life Years, Bulletin of the WHO, Vol. 72(3), pp.429- 445

8. Reproductive, Maternal, Neonatal, Child Health and Adolescent Health (RMNCH+A)

- . Reproductive Child Health (RCH): Evolution-
- . CSSM, RCH, RCH-2,
- . RMNCH and RMNCH+A
- . Universal Immunization programme (UIP)
- . National Family Welfare Programme
- . Public Health Nutrition
 - . Balance and prudent diet
 - . Diet and its assessment
 - . Nutritional requirement
 - . Nutritional deficiencies and its disorders
 - . National Iodine Deficiency Disorders (DD) control programme
 - . IYCF
 - . Mid Day meal scheme and Balwadi program
 - . ICDS

9. Health Management: Management Principles and practices

- . Basic knowledge of health care systems and the environment in which health care managers and providers function
- . Components of strategic management
- . Project management
- . Introduction to logistics management
- . Introduction to human resource management
- . Modern Management Techniques
- . Network analysis: PERT, CPM
- . Quality: define quality, its importance in public health, measures to manage and improve equality
- . Introduction to Operational Research
- . Risk management
- . Planning & Management, Planning Cycle
- . Health Management Information Systems (HMIS) and its application
- . Public Health Leadership

Practical activity:

- . Visit to Hospital record section for HIMS
- . logistics management of health centres

Suggested readings:

- . Lieber J.G., C. McConnel. Management principles for health professionals. Sundbury, MA: Jones and Barlett. 2010.
- . Sathe, et al. Epidemiology and Management for Health Care: Popular Prakashan, Mumbai
- . International Public Health: Diseases, Programs, Systems, and Policies by Michael Merson, Robert E Black, Anne J Mills - Jones and Bartlett Publishers

10. Introduction to health economics

- . Health economic basic concept
- . Concepts of efficiency, effectiveness, equity, elasticity of demand, costing, production, marginal cost analysis, and opportunity cost
- . Principles and application of economic evaluation in health care including Cost Benefit Analysis (CBA) and Cost Effective Analysis (CEA),
- . Cost Benefit Analysis Cost Effective analysis, and Cost-Utility analysis
- . Universal health coverage
- . Health Insurance institutions and program
- . Performance Appraisal
- . Key concepts of economics, micro and macro economics

Practical activity:

- . Cost Benefit Analysis (CBA) and Cost Effective Analysis (CEA)
- . Medical audit

Suggested readings:

- . Health Economics in India (Edited), Prashant Panda and Himanshu Rout, New Century Pubns, 2007
- . Methods of economic evaluation of health care programmes, Michael F. Drummond, Mark J. Sculpher, Karl Claxton, Greg L. Stoddart, George W. Torrance, 4th edition, 2015
- . Health Economics Theory, Insights and industry studies, Rexford R Santerre and Stephen P Neun 5th Edition 2010
- . The Economics of Health and Health Care, Sherman Folland, Allen C. Goodman, Miron Stano 7th Edition
- . Principles of Economics, N. Gregory Mankiw, 8th Edition

11. Introduction to financial management and budgeting

- . Introduction to financial management
- . Tools of financial analysis and planning in health care
- . Effectiveness and efficiency
- . Zero Based Budgeting Performance Based Budgeting
- . Determinants of demand, supply and costs of production
- . Market model, market failure, and the roles and limitations of markets in health care
- . Universal health coverage and role of health care financing

Suggested readings:

- . Sathe, et al. Epidemiology and Management for Health Care: Popular Prakashan, Mumbai
- . Financial Management in Health serves, Reinhold Gruen and Anne Howarth, McGraw Hill Education
- . Health Financing Universal Health Coverage- a MOOC (Massive Open Online Course) developed by WHO.

12. Introduction to health system and policy in Developing countries

Health care system

- . Evolution of public health initiatives: primary health care, selective primary health care, MDGs, SDGs
- . Alma Atta and Asthana declaration
- . Service Delivery; how care is delivered within countries
- . Health workforce
- . Information systems
- . Medical products, vaccines & technologies, including product supply delivery
- . Financing of health systems and Universal Health Coverage.
- . Leadership, governance and regulation
- . Monitoring and evaluation of health systems
- . Challenges in Public health delivery system: with ref to delivery, performance, effectiveness, efficiency, and equity, discussion about the sources of problems and potential solutions
- . Health Care Systems in India- types of service providers, sources and methods of financing, and regulations.
- . IPHS- Subcentre, PHC, CHC, U-PHC, district hospitals
- . Health care system in Developed and developing countries
- . Health care planning:
 - . Health manpower planning & distribution.
 - . Economics of Health manpower planning and political process.

- . Evaluating health Systems.
- . Role of hospitals in Primary health Care.
- . Administration of rural hospitals
- . Health system strengthening

Health Policy

- . Basic approaches to the design, analysis and interpretation of health programs
- . Framework to evaluate the effectiveness of health programme implementation
- . Process, outcome and impact evaluation
- . Basic theoretical approaches and concepts used in policy analysis
- . Understanding of global and national health policies, including current trends
- . System thinking
- . Health Systems Strengthening
- . Innovations in service delivery
- . Framework for evaluation of services
- . Community Need Assessment
- . Basic steps in Policy Proposal
- . National Health Policy
- . National Population Policy
- . Public Health Declarations Jakarta Health Declaration Ottawa Charter Alma-Ata, Asthana Declaration

Practical activity:

- . Case Study: how to integrate a package of care for a specific problem into a platform of healthcare delivery
- . Visits at Anganwadi, Primary Health Center, District Health Office, HAHC Hospital, water treatment plant, Non Government Organisation

Suggested reading:

- . IPHS Guidelines for Subcentre, PHC, CHC and District Hospitals
- . Rao, K. S. (2016). Do we care?: India's health system. Oxford University Press.
- . Rifkin S. B. (2018). Alma Ata after 40 years: Primary Health Care and Health for All-from consensus to complexity. BMJ global health, 3(Suppl 3), e001188.
- . National Health and Research Policy Document. (2011) Department of Health Research Ministry of Health & Family Welfare Government of India, New Delhi
- . Expert Committee Report on Public Health Systems in India
- . Health Systems Strengthening a MOOC (Massive Open Online Course) developed by the Nossal Institute for Global Health & UNICEF

Savigny, Donald de, Adam, Taghreed. Systems Thinking for Health Systems Strengthening. 2009. Alliance for Health Policy and Systems Research, World Health Organization.

13. Social and behaviour change, effective communication in health care

Social and Behaviour change

- . Introduction on sociological perspectives on health
- . Key concepts in sociology as applied to the study of health
- . Social and cultural processes impacting health status and access to health services
- . Basic theories, concepts and models of social and behavioral disciplines in public health research and practice
- . Introduction to behaviour change theories and communication
- . Implementing and managing social and behaviour change communication in public health:
 - Information Education and Communication (IEC),
 - Inter Personal Communication (IPC),
 - Behaviour Change Communication (BCC),
 - Social Behaviour Change Communication (SBCC)
- . Health and human behaviour
- . Medical anthropology
- . Social marketing

Communication in Healthcare

- . Human behaviour and communication, its role in public health problems and solutions
- . Public speaking
- . Verbal vs. Non-verbal communication
- . Various forms of written communication
- . Evidence based advocacy
- . Using audio visual aid in communication

Field Work

- . Secondary data analysis with appropriate qualitative research (FGD, etc.)
- . Health Communication Modules

Suggested readings:

The Handbook of Behavior Change. Edited by Martin S. Hagger, Merced, Linda D. Cameron, Merced, Kyra Hamilton et al, :Cambridge University Press. 2020

14. Health promotions approaches and methods and evaluation

- . Introduction to Health Promotion
- . Concept of Health promotion
- . Social determinants, Equity in health
- . Theories and models of health promotion
- . Principles of Health promotion
- . Communication Strategies
- . Etiquettes and professionalism
- . Evidence based health promotion
- . Assessment of health promotion strategies in health programs
- . Community need assessment for designing an effective health promotion activity
- . Social issues like:
 - Substance abuse
 - Smokeless (chewable) and smoked tobacco addictions
 - Alcoholism
 - Suicide

Field Work

- . Case study
- . Substance abuse
- . Behavioural disorders among children and adolescent
- . Family study

Suggested readings:

The Handbook of Behavior Change. Edited by Martin S. Hagger, Merced, Linda D. Cameron, Merced, Kyra Hamilton et al, :Cambridge University Press. 2020

15. Law and Ethics in public health

- . Legislation related to Census, Birth and Death, Tobacco and Drug Control, The Transplantation of Human Organs, Women Empowerment and Child Protection
- . Health Legislation related to the Welfare and Rehabilitation of Disadvantaged Occupational Health Legislations, Environment Health Legislations.
- . Food safety and Protection Act Consumer Protection Act.

- Human rights in public health
- Individual and social responsibility of Health
- Role of governments in managing health of people
- Public health regulations in Indian context
- Public health information and privacy
- Research ethics in public health
- Historical perspectives & Introduction to Bioethics, Nuremberg Code, Declaration of Helsinki,
- Principle of essentiality, informed consent, confidentiality, minimisation of risk, accountability and responsibility.
- Ethics of clinical trials: Drug trials, vaccine trials, Clinical trials with medical devices/surgical procedures/radioactive materials, Research in transplantation and stem cell therapy.
- Regulatory framework and guidelines for conduction of human research: Review processes, Institutional ethical committees, composition of committees, review procedures, WHO, UNESCO and ICMR guidelines.
- Regulations during emergencies and outbreaks
- Addressing newer challenges: Bioterrorism, conflicts and emerging infectious diseases

Suggested readings:

- Michael Boylan. International Public Health Policy and Ethics: 2008. Springe
- Public Health Law 101. A Foundational Course for Public Health Practitioners Overview. Centers for Disease Control and Prevention.

ELECTIVE MODULES

Stream B1: EPIDEMIOLOGY

- i. **Advanced Biostatistics:**
 - Principles of regression
 - Methods of regression
 - Linear regression
 - Logistic regression
 - Poisson regression
 - Cox proportional hazards regression
 - Regression diagnostics
 - Introduction to multilevel modelling
 - Introduction to data imputation
- Choosing the best models

ii. Advanced Epidemiology:

- Directed acyclic graphs and conceptual framework
- Confounding bias and methods to reduce confounding
- Selection bias
- Information bias
- Measures of validity and reliability
- Nested study designs
- Advanced designs in clinical trials
- Systematic reviews and meta-analysis overview
- Epidemiology and management of Vector Borne Diseases
- Health measures following disasters
- Various public data sources: CRS, SRS, Census, NFHS, DLHS, HMIS, MCTS, etc.

iii. Survey design and methods:

- Pre survey formative research
- Sampling and sample size calculations
- Ethical issues in surveys
- Tool development
- Conduct of surveys
- Quality control and assurance in surveys
- Survey data analysis
- Identify appropriate research designs for a range of questions in health
- Describe the steps involved in planning and conducting a research project
- Evaluate the strengths and weaknesses of various data collection methods

iv. Communicable disease epidemiology:

- Recognize the burden of communicable diseases (CD) affecting the population
- Examine factors contributing to the persistence of infectious diseases •
• Understand reasons for emergence and re-emergence of infectious diseases •
Key concepts covered are:
 - o Incubation periods
 - o Epidemic patterns
 - o Modes of transmission
 - o Transmission dynamics
 - o Measures of infectiousness
 - o Secondary attack rates

- Analyze the transmission dynamics of diseases and design appropriate control measures
 - Apply basic infectious diseases epidemiological skills to address major emerging and re-emerging communicable diseases
 - Surveillance: Case in point: Integrated Disease Surveillance Program (IDSP)
 - Epidemiology of common communicable diseases like TB, Malaria, Leprosy, Polio, STIs, AIDS, Meningococcal meningitis, Hepatitis B, and Measles (mathematical models of infection dynamics, outbreak investigation and surveillance, schedules, adverse reactions, contraindications, vaccine efficacy, impact assessment)
 - Live outbreak investigation
 - Adverse Event Following Immunization (AEFI) investigation
- v. **Non-communicable disease epidemiology:**
- Describe and understand the epidemiology of NCDs o Cardiovascular diseases o Hypertension o Diabetes mellitus o Cancers o Mental health o Stroke o Burns/trauma/ accidents etc.
 - Comprehend the upstream and downstream determinants of NCDs
 - Understand the Individual approaches/or high-risk approaches and population based/ or public health approaches to prevent NCDs Recognize the risk factor approach to prevent non-communicable diseases
 - Comprehend the Population based/public health approaches to prevention of common NCD risk factors (physical inactivity, tobacco and unhealthy diet) Familiarize with the current projects on targeting the prevention of NCDs, including, innovations in prevention How prevention of NCDs interlinks with Communicable diseases. How women and child health, health of the girl child links to prevention of NCDs
 - Recognize Economic burden of NCDs and benefits of prevention
 - Comprehend how sustainable development and prevention of NCDs go hand in hand
 - Comprehend the power of policy and role of environment in the prevention of NCDs
 - Population-based screening
 - Surveillance of cancers including cancer registry

Disaster management

- Disaster cycle
- Triage
- Public health disasters in history of mankind



Stream B2: RMNCH+A

i. Sexual and Reproductive Health

- Fundamentals of reproductive biology
- Adolescent Sexual and Reproductive Health
- Understanding Reproductive Health Policy
- Family Welfare and Reproductive Health measures
- Reproductive Health programs in India

ii. Maternal, Newborn, Child Health

- Introduction to maternal, new-born and child health programs and their behavioural basis
- Historical developments in MCH in India
- Reproductive & Perinatal Epidemiology
- Prenatal and Infant Growth and Development
- Issues in the Reduction of Maternal and Neonatal Mortality
- Preventing peri-natal and infant mortality
- Infectious Disease and Child Survival
- Nutrition and Growth in Maternal and Child Health
- Legislations and programs in MCH

iii. Adolescent health

- Overview of population health approaches for adolescents
- Adolescent Health and Development
- The Social Context of Adolescent Health and Development
- International Adolescent Health
- Adolescent Health status in India
- Adolescent Health Development - policy and systems
- Health issues specific to adolescents: anaemia, teenage pregnancy, menstrual hygiene, obesity, mental health promotion and illness prevention, substance use prevention, violence, media etc.

iv. Public Health Nutrition

- Appreciate the basic concepts and principles of foods and nutrition relevant to human health
- Summarize population based dietary and nutritional recommendations
- Define the concept, purpose and scope of Public Health Nutrition

- Understand the definition, utility and applications of epidemiology in nutritional sciences
- Recognize the role of community nutrition in improving human health
 - Utilize suitable data and assessment methodologies to conduct community needs assessment
- Recognize the pillars of a healthy community
- Identify the most relevant nutrition concerns in the community at present and enlist strategies for their prevention and management (Adolescent, Women, Maternal and child under-nutrition, nutrition transition, over-nutrition and chronic diseases)
- Demonstrate an understanding of principles of nutrition education and enlist the steps of developing nutrition education programs
- Demonstrate an understanding of project planning and management in nutrition programmes
- Appreciate inter-sectoral nature of nutrition and food policy
- Enlist the features of various ongoing nutrition programs
- Under/over nutrition

v. Gender and Health:

- Define concepts - Gender, vulnerable populations, gender equality and equity and emerging issues
- Understand the difference between equity and equality
- Understand different forms of social exclusion
- Explain the difference between sex and gender and how these variables, combined with other forms of social exclusion impacts on health
- To increase understanding of the importance, benefits and urgency to identify and reduce barriers and address the needs of women and socially excluded groups, and promote their agency in the context of accessing health care and related information
- To increase understanding of the inter- sectionalism between gender and other types of social exclusion/inclusion and patients' experiences in accessing and utilising health services and the impacts on uptake and utilization of services
- To increase understanding of the realities of discrimination from the grass root perspective
- To identify good practices in Gender and Social Inclusion (GSI) within India

- To become familiar with toolkits for including GSI in public health research, programs, policies and advocacy

Suggested readings:

- Kotch Jonathan B. Maternal and Child Health: Programs, Problems, and Policy in Public Health 3rd Edition Jones & Bartlett Learning; 3 edition (May 11, 2012)

Stream B3: Disaster Mitigation

- i. Introduction to Disaster Management & Mitigation:**
 - Definition
 - National proneness to disaster
 - History of disasters and their repercussion, prerecessions
 - Preparedness, Mitigation
 - Risk management and assessmen
- ii. Impact of a disaster, Types of disaster:**
 - Man made and Natural Disaster,
 - Management Cycle,
 - Differences from a hazard and catastrophe,
 - Short term and long term risk,
 - Health risk Assessment
- iii. National Disaster Management Act:**
 - National Disaster Management Act,
 - Epidemic Diseases Act,
 - Role of National Institute of Disaster Management,
 - Role of State and districts in Disaster Preparedness.
 - Chapters I – X in the Disaster Management Act consisting of the various basics, legal issues, punishments and liabilities.
- iv. Role of NDMA and Public Health Expert during Disaster and the expectations**
 - Role of NDMA in dealing with Disasters with examples and BEST Practices.
 - Role of a Public Health Expert during Disaster and the expectations – at various Levels,

- Triage, Secondary attacks, education, sanitation, communication and Secondary infection control
- v. **Challenges and barriers in the mitigation strategies & Bioterrorism**
 - Challenges and barriers in the mitigation strategies
 - Unified Command, Systematic Rehabilitation, Control of NGOs, Response tools.
 - Preparedness strategies – Mock drill, simulation exercises, indigenous clues and future ahead, Reconstruction and Rehabilitation

Stream B4: Global Health

- i. **Global Health in 21st century**
 - Recognise the essential underpinnings of global health
 - Understand the present global health architecture and governance arrangements
 - Understand how global health is positioned in Agenda 2030: Sustainable Development Goals
 - Primary health care for all to Universal Health Coverage
 - Analyse global health issues through the lens of the social determinants of health or human rights principles
 - health disparities and inequity across the global setting
 - Familiarise with global health law and global health security
 - Discuss how global health is used as an instrument for waging war and peace
 - Analyse concerns around healthcare in danger, and health as a bridge for peace
 - Understand the role business plays in health, negatively and positively
 - Look at future trends in the 21st century: from global health to planetary health
- ii. **Global Health issues**
 - The Global Burden of Disease
 - Analyse global health issues through the lens of the social determinants of health or human rights principles
 - health disparities and inequity across the global setting
 - Equity- Gap Analysis
 - Community health programs in low resource settings
 - Global Environmental Challenges: Food security, water scarcity, population, and urbanization
 - Social determinants of health – Global to Local Immigrant health
 - Social, political, economic, and environmental determinants of health and societal responses to health problems globally.

- Covers impact of colonialism, equity strategies, Primary Health Care, neoliberalism, war, international agencies, the climate crisis, water, sanitation, and traditional health systems.

iii. **Global Health Programs and Policy**

- Case of child health across global settings, role of UNICEF
- Community health programs in low resource settings
- Reproductive health in developing countries
- The nutritional transition in developing countries
- Humanitarian Assistance and Disaster Relief - Refugees and Displaced Peoples
- Case studies across global settings on
 - The Health of Women/Mothers and Children
 - Human Trafficking
 - Environmental Health in the Global Context
 - Nutrition
 - Primary Care in Global Health
 - Malaria
 - Tuberculosis and HIV/AIDS
 - The Neglected Tropical Diseases
 - Emerging Diseases and Antimicrobial Resistance
 - Injury and Global Health
- Various LANCET global health commissions

iv. **Global Health : Communication, economics and ethics**

Global Health : Communication

- Global Health communications research and campaigns
- News media, social media, participatory communication, and “edutainment” in health promotion and education
- Barriers to health communications research and delivery, particularly in developing countries and with underserved minority populations worldwide
- Social marketing
- Modern communication technologies including mobile phones and personal data and their in improve health

Global Health Economics

- Global Health Policies and Political economy of Health
- Poverty and health, wealth and health
- interrelationships between health and economics - looking at three key diseases (malaria, tuberculosis, and HIV/AIDS)

- Health care financing system
 - risk pooling, risk aversion, adverse selection, and moral hazard
- v. **Ethics equality and equity**
- Concept of global health ethics and its components
 - Global health ethics and its relationship to human rights; culture, including race, gender, ethnicity, and religion; poverty; and ill health
 - Concept of the global being and global person in the milieu of equity, equality, justice, and benchmarks of fairness

Suggested readings:

- Understanding Global Health, 2E | Edition: 2, 2013. Author: William Markle, Melanie Fisher, Jr., Ray Smego Ray
- Oxford textbook of Global Public Health Ed. Roger Detels, James McEwen, Robert Beaglehole, and Heizo Tanaka Oxford University Press (OUP) 4th Edition: 2002.

Stream B5 Nutrition

- i. **Basics and Physiology of Nutrition**
- Dietetics, Principles and type of nutrients,
 - Requirements,
 - Health aspects and benefits
 - Reference Indian man or woman
 - Balanced & Prudent Diet
 - Food Groups, Food Pyramid & MyPlate
- ii. **Malnutrition**
- Undernutrition during infancy and Malnutrition in young children,
 - Measuring Child Nutrition,
 - Prevention and Control of Protein Energy Malnutrition,
 - Growth monitoring and Nutrition Surveillance.
 - Obesity and its implications
- iii. **Food fortification, Food poisoning and intoxication**
- Food fortification,
 - Food poisoning and intoxication

- Safety of food and food Handling
- Genetically modified food and crops,
- Challenges and the future ahead
- Nutrition in special age groups: Geriatrics and Pregnant

iv. Dietary Surveys and methods for nutritional assessment

- Types of dietary surveys: qualitative & quantitative intake of food
- Food frequency questionnaire
- Food records
- 24 hour recall method
- Food balance sheet
- Weighment method
- Inventory method list
- Expenditure pattern method
- Diet history: Burke's diet history:
- Duplicate samples
- Recording methods

v. Nutritional Programmes & Policies

- Nutrition Interventional Programmes
 1. Vitamin A Prophylaxis Programme.
 2. Prophylaxis against Nutritional Anaemia.
 3. Iodine Deficiency Disorders Control Programme.
 4. Special Nutrition Programme.
 5. Balwadi Nutrition Programme.
 6. Integrated Child Development Services Programme.
 7. Midday Meal Programme.
 8. NIPI
- National Nutrition Policies,
- FSS Act and other legislations. FSSAI
- Community level nutritional Programmes and other aspects of Public Health Nutrition

C. INTERNSHIP:

Two months' internship will be undertaken by all the candidates with an aim to integrate learning and practice in an active public health organization. This can be undertaken at governmental or non-governmental public health organisations or program management units. The internship should include the candidate's role and support in assessing, monitoring, or conducting surveillance of health problems/services in a population; research on population-based health problems; developing and/or implementing policies and intervention strategies to meet public health needs. Overall it should contribute to the organization, and should help in understanding public health management and coordination and gaining personal confidence and leadership experience. **Although finding a suitable internship opportunity lie with the candidate him/herself, mentors will facilitate the process.** After the completion of 2 months of internship, candidates will be expected to submit a brief summary of public health program/challenge dealt with and solution proposed/implemented by the candidate at the end of second semester.

D. DISSERTATION

At the end of the fourth semester, candidates will submit their dissertation on previously chosen and approved topic for assessment. The dissertation will be evaluated by an internal examiner (60% weightage) and an external examiner (40% weightage) including a viva-voce.

Candidates should submit their project plan and preliminary time scale with their chosen topic for dissertation at the end of the first semester to their mentor/tutor to seek appropriate approvals before embarking on the full investigation and project.