

INTEGRAL UNIVERSITY LUCKNOW



SYLLABUS

For

**MASTERS IN PUBLIC HEALTH (MPH)
Programs**

Effective from 2022-23



सत्यमेव जयते

MASTERS IN PUBLIC HEALTH

The Public Health Landscape in India:

Despite significant achievements over the years, Public Health challenges continue to stretch the existing resources, both in India and in the world. The countries, across the globe, strive towards achieving the Millennium Development Goals, yet the agenda remains unfinished. With the commencement of Sustainable Development Goals (SDG) era, a renewed thrust is required to maintain and improve upon the progress achieved so far.

While old threats continue to challenge health systems, new issues and challenges have appeared, thereby overburdening the health systems. Countries have developed an increased ownership towards the need to create a healthier population. Across the world, governments and voluntary organizations have worked towards strengthening the health systems through multiple approaches. Creation of a dedicated Public Health Cadre has been identified as one of the important pre-requisites in this direction. Public Health professionals help in bridging the gap between the clinical and managerial aspects of the program implementation and provide techno-managerial inputs. Public Health Programs demand a special emphasis on the study of disease epidemiology, various determinants of health & emerging challenges in health, public policy making and program management.

The determinants of health reside both within and beyond the formal health sector. Public health, as defined by Winslow is both an ‘art’ and a ‘science’. Every discipline has its unique perspective of the world. We believe these perspectives from individual disciplines enrich public health. This course will be an attempt to prepare competent cadre of professionals who have a basic understanding of the various aspects of public health and are able to successfully apply this knowledge towards meeting public health challenges in Indian context.

Establishment of the Taskforce on Public Health in India:

The Joint Working Group UK- India embarked on the Master of Public Health (MPH) curriculum under the direction of Joint Secretary (Medical Education and Training) and held its first meeting on Sep 03, 2014 at New Delhi and the second meeting in January 2015 in London, UK. Subsequent to further joint meetings, led by the two co-chairs, it was decided to form a Taskforce on Public Health Education (PHE) in India under the Sub-group on Health Education and Training with expert members from the two countries.

The curriculum guideline that follows herewith, is a result of detailed deliberations, both remote and in person, between public health (PH) experts of both countries. As prescribed in the Terms of Reference for the Taskforce, the following essential elements, among others, have been addressed and included:

- a) Level of course/ semester(s) for MPH
- b) Minimum duration of course work
- c) Evaluation criteria
- d) Expected skills and competencies to be developed in the PH Postgraduate

Overall Course Objectives in terms of Skills, Competencies and Learning

Outcomes:

The course will help candidate to **develop skills in the following areas:**

- Analytical and assessment skills for collecting and interpreting information
- Policy planning and development skills to address public health challenges
- Communication skills for advocacy, dissemination and evaluation of public health data and information

- Financial planning and management skills for running public health programs in the country
- Leadership skills

At the end of the 2-years program, the PH Post-graduates are expected to demonstrate the **following Broad Values in the context of Public Health:**

1. Apply contemporary ideas to influence program organization and management, problem solving and critical thinking in public health domain
2. Undertake operational research in institutional and field settings
3. Work in socially, culturally and economically diverse populations by being attentive to needs of vulnerable and disadvantaged groups and be well versed with existing health systems
4. Demonstrate qualities of leadership and mentorship
5. Be an effective member of a multidisciplinary health team
6. Demonstrate ethics and accountability at all levels (professional, personal and social)
7. Practice professional excellence, scientific attitude and scholarship
8. Demonstrate social accountability and responsibility
9. Be open to lifelong learning

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
- 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:

Since public health is interconnected and influenced by our surrounding, global institutions have wide eligibility criteria for undertaking the Masters in Public Health (MPH) programs. In the Indian context, we see a very important role for candidates from multiple professional backgrounds within MPH programs. Thereby, the eligibility Criteria for MPH program in India may include both science as well as non-science graduates.

The following are suggested eligibility criteria for the MPH Program in India:

Graduates in

- Medicine / AYUSH / Dentistry / Veterinary Sciences / Allied and Health Sciences / Life Sciences
- Statistics / Biostatistics / Demography / Population Studies / Nutrition / Sociology / Psychology / Anthropology / Social Work

Although highly recommended, candidates need not be restricted to the above disciplines and graduates from selected backgrounds other than these, may be taken by the Universities, when considering the overall aptitude and eligibility of a certain candidate.

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

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 several elective modules which may be offered by Universities depending on their capacity and capability. **Four** elective streams comprising five modules each have been suggested in this document in addition to **15 Core** modules. A candidate will need to pass 15 Core (compulsory) modules, and five (5) elective modules of the chosen stream to successfully complete the program.

A. Core modules (compulsory for all four streams)

- a. Principles and practice of Public Health
- b. Introduction to health system and policy in Developing countries
- c. Health Management: Management Principles and practices
- d. Basic Epidemiology
- e. Basic Biostatistics
- f. Demography and population sciences

- g. Introduction to health economics
- h. Health promotions approaches and methods and evaluation
- i. Introduction to financial management and budgeting
- j. Social and behaviour change, effective communication in health care
- k. Reproductive, Maternal, Neonatal, Child Health and Adolescent Health (RMNCH+A) also to include Family Planning
- l. Introduction to health programme evaluation
- m. Principles of social research methods
- n. Environment and occupational health
- o. Law and ethics in public health

B. Elective streams

- **Epidemiology**

- i. Advanced Biostatistics
- ii. Advanced Epidemiology
- iii. Survey design and methods
- iv. Infectious disease epidemiology
- v. NCD epidemiology

Note: *Modules (i) to (v) compulsory for Epidemiology Stream*

- **Health system management**

- i. Strategic management in health care and Health Entrepreneurship
- ii. Advanced Operational research
- iii. Advanced Financial management and budgeting
- iv. Organizational management and services
- v. Effective advocacy and communication in Public Health

Note: *Modules (i) to (v) compulsory for Health Management Stream*

- **Health Programme, Policy and Planning**

- i. Health policy, process and planning
- ii. Programme planning and evaluation of public health programmes (including current NHPs)
- iii. Translating research into policy and health advocacy
- iv. Current issues in Health Policy: National and global perspective
- v. Role of non-governmental organizations in health care

Note: *Modules (i) to (v) compulsory for Health Programme, Policy and Planning Stream*

- **RMNCH+A**

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

Note: *Modules (i) to (v) compulsory for RMNCH+A Stream*

Note: Institutes may also choose to offer elective modules in other thematic areas such as Advanced Health Economics and Financing, Advanced Health Informatics, Demography and Population sciences, Advanced Environmental and Occupational health, Global health security and International Policies, Advanced Health Promotions, Human Resources for Health etc. Each elective stream MUST contain coursework for at least **10 credits or 350 hours**.

C. Internship

D. Dissertation

Semester Distribution of Master's Program

Suggested calendar of activities (1 month ~ 100 teaching hours @ 5 hours per day* 5 days a week) (1 credit = 35 teaching hours) Breaks to be calculated as applicable			
Semesters	Months	In/out Campus	Approximate division of Teaching/practical hours
Semester 1	6 months	In campus classes	~450
Semester 2	4 months	In campus classes	~300
	2 months	Internship	~75
Semester 3	6 months	In campus classes	~450
Semester 4	2 months	In campus classes	~150
	4 months	Research, submission and defence of dissertation	350

Holidays and breaks may be planned as applicable to each individual institution/regional calendar. The suggested organization of modules is as follows:

SEMESTER 1 MODULES
Principles and Practices of Public Health
Introduction to Health System and Policy in Developing Countries
Health Management : Management Principles and Practices (Strategic management)
Basic Epidemiology
Basic Biostatistics
Demography and Population Sciences
SEMESTER 2 MODULES
Introduction to Health Economics
Health Promotion Approaches and Methods
Introduction to Financial Management and Budgeting
Social and Behaviour Change, Effective Communication in Health Care
SEMESTER 3 MODULES
Reproductive, Maternal Health, Child Health and adolescent (RMNCH+A)
Introduction to Health Programs and evaluation
Principles of Social Research Methods
Environment and Occupational Health
Law and Ethics in Public Health
SEMESTER 4 MODULES
Elective Stream modules (5)

COURSE CREDITS AND TEACHING HOURS

S No.	COURSE	Teaching Hours
A	CORE MODULES	
(a)	Principles and Practices of Public Health	52.5
(b)	Introduction to Health System and Policy In Developing Countries	70
(c)	Health Management : Management Principles and Practices (Strategic management) and Introduction to Operational Research	70
(d)	Basic Epidemiology including Non-Communicable and Communicable diseases	87.5
(e)	Basic Biostatistics	87.5
(f)	Demography and Population Sciences	52.5
(g)	Introduction to Health Economics	52.5
(h)	Health Promotion Approaches and Methods	52.5
(i)	Introduction to Financial Management and Budgeting	70
(j)	Social and Behaviour Change, Effective Communication in Health Care	52.5
(k)	Reproductive, Maternal Health, Child Health and adolescent (RMNCH+A)	52.5
(l)	Introduction to Health Programme design and evaluation	87.5
(m)	Principles of Research Methods	87.5
(n)	Environment and Occupational Health	52.5
(o)	Law and Ethics in Public Health	52.5
	TOTAL FOR CORE MODULES	980
B	ELECTIVE MODULES	350
B1	Epidemiology	
i.	Advanced Biostatistics	70
ii.	Advanced Epidemiology	70
iii.	Survey Design and Methods	70
iv.	Infectious Disease Epidemiology including live Outbreak Investigation	70
v.	NCD Epidemiology	70
	TOTAL FOR ELECTIVE MODULE	350
B2	Program Policy and Planning	
i.	Health Policy, Process and Planning	70
ii.	Programme Planning and Evaluation of Public Health Programmes (including current NHPs) – (1 week) – All Programs	70
iii.	Translating Research into Policy and Health Advocacy	70

S No.	COURSE	Teaching Hours
iv.	Current Issues in Health Policy: National and Global Perspective	70
v.	Role of Non-Governmental Organization in Health Care	70
	TOTAL FOR ELECTIVE MODULE	350
B3	Health Management	
i.	Strategic management and Entrepreneurship in health care	70
ii.	Operational Research (Advanced)	52.5
iii.	Advanced Financial Management and Budgeting	70
iv.	Organizational Management and Services	87.5
v.	Effective Communication in Public Health	70
	TOTAL FOR ELECTIVE MODULE	350
B4	RMNCH+A	
i.	Reproductive and Sexual Health	70
ii.	Maternal and child Health-Advanced	70
iii.	Adolescent Health	70
iv.	Gender and Health	70
v.	Public Health Nutrition	70
	TOTAL FOR ELECTIVE MODULE	350
	Internship and Dissertation	
C	Internship	70
D	Dissertation	350
	Total (Core modules +one elective stream + Internship + Dissertation)	1750

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

INTEGRAL UNIVERSITY, LUCKNOW
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DEPARTMENT OF BASIC MEDICAL SCIENCES
STUDY & EVALUATION SCHEME
MASTER IN PUBLIC HEALTH (MPH)
(W.e.f. July 2022)

I-Year

I-Semester

S.N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	MPH101	Principles and Practices of Public Health	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	MPH102	Introduction to Health System and Policy in Developing Countries	Core	3	1	0	40	20	60	40	100	3:1:0	4
3	MPH103	Health Management : Management Principles and Practices (Strategic management)	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	MPH104	Basic Epidemiology	Core	3	1	0	40	20	60	40	100	3:1:0	4
5	MPH105	Basic Biostatistics	Core	3	1	0	40	20	60	40	100	3:1:0	4
6	MPH106	Demography and Population Sciences	Core	3	1	0	40	20	60	40	100	3:1:0	4
Total				18	6	02	240	120	360	240	600	24	24

L: Lecture **T:** Tutorials **P:** Practical **C:** Credit **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination
Sessional Total: Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)

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I-Year

II-Semester

S.N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	MPH107	Introduction to Health Economics	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	MPH108	Health Promotion Approaches and Methods	Core	3	1	0	40	20	60	40	100	4:1:0	4
3	MPH109	Introduction to Financial Management and Budgeting	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	MPH110	Social and Behaviour Change, Effective Communication in Health Care	Core	3	1	0	40	20	60	40	100	3:1:0	4
Total				12	4	00	160	80	240	160	400	16	16

L: Lecture **T:** Tutorials **P:** Practical **C:** Credit **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination

Sessional Total: Class Test + Teacher Assessment

Subject Total: Sessional Total + End Semester Examination (ESE)

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II-Year

III-Semester

S.N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	MPH201	Reproductive, Maternal Health, Child Health and adolescent (RMNCH+A)	Core	3	1	0	40	20	60	40	100	3:1:0	4
2	MPH202	Introduction to Health Programs and evaluation	Core	3	1	0	40	20	60	40	100	4:1:0	4
3	MPH203	Principles of Social Research Methods	Core	3	1	0	40	20	60	40	100	3:1:0	4
4	MPH204	Environment and Occupational Health	Core	3	1	0	40	20	60	40	100	3:1:0	4
5	MPH205	Law and Ethics in Public Health		3	1	0	40	20	60	40	100	3:1:0	4
Total				15	5	00	200	100	300	200	500	20	20

L: Lecture **T:** Tutorials **P:** Practical **C:** Credit **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination
Sessional Total: Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)

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DEPARTMENT OF BASIC MEDICAL SCIENCES
STUDY & EVALUATION SCHEME
MASTER IN PUBLIC HEALTH (MPH)
(W.e.f. July 2022)
Elective Module-1: Epidemiology

II-Year

IV-Semester

S.N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	MPH206	Advanced Biostatistics	Elective	3	1	0	40	20	60	40	100	3:1:0	4
2	MPH207	Advanced Epidemiology	Elective	3	1	0	40	20	60	40	100	4:1:0	4
3	MPH208	Survey Design and Methods	Elective	3	1	0	40	20	60	40	100	3:1:0	4
4	MPH209	Infectious Disease Epidemiology including live Outbreak Investigation	Elective	3	1	0	40	20	60	40	100	3:1:0	4
5	MPH210	NCD Epidemiology	Elective	3	1	0	40	20	60	40	100	3:1:0	4
6	MPH211	Internship	Core										
7	MPH212	Dissertation	Core										
Total				15	5	00	200	100	300	200	500	20	20

L: Lecture **T:** Tutorials **P:** Practical **C:** Credit **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination
Sessional Total: Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)

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(W.e.f. July 2022)
Elective Module-2: Program Policy and Planning

II -Year

IV-Semester

S.N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	MPH206	Health Policy, Process and Planning	Elective	3	1	0	40	20	60	40	100	3:1:0	4
2	MPH207	Programme Planning and Evaluation of Public Health Programmes (including current NHPs) – (1 week) – AllPrograms	Elective	3	1	0	40	20	60	40	100	4:1:0	4
3	MPH208	Current Issues in Health Policy: National and Global Perspective	Elective	3	1	0	40	20	60	40	100	3:1:0	4
4	MPH209	Role of Non-Governmental Organization in Health Care	Elective	3	1	0	40	20	60	40	100	3:1:0	4
5	MPH210	NCD Epidemiology	Elective	3	1	0	40	20	60	40	100	3:1:0	4
6	MPH211	Internship	Core										
7	MPH212	Dissertation	Core										
Total				15	5	00	200	100	300	200	500	20	20

L: Lecture **T:** Tutorials **P:** Practical **C:** Credit **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination
Sessional Total: Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)

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(W.e.f. July 2022)
Elective Module-3: Health Management

II-Year

IV-Semester

S.N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	MPH206	Strategic management and Entrepreneurship in health care	Elective	3	1	0	40	20	60	40	100	3:1:0	4
2	MPH207	Operational Research (Advanced)	Elective	3	1	0	40	20	60	40	100	4:1:0	4
3	MPH208	Advanced Financial Management and Budgeting	Elective	3	1	0	40	20	60	40	100	3:1:0	4
4	MPH209	Organizational Management and Services	Elective	3	1	0	40	20	60	40	100	3:1:0	4
5	MPH210	NCD Epidemiology	Elective	3	1	0	40	20	60	40	100	3:1:0	4
6	MPH211	Internship	Core										
7	MPH212	Dissertation	Core										
Total				15	5	00	200	100	300	200	500	20	20

L: Lecture **T:** Tutorials **P:** Practical **C:** Credit **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination
Sessional Total: Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)

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Elective Module-4: RMNCH+A

II-Year

IV-Semester

S.N.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub. Total	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	MPH206	Reproductive and Sexual Health	Elective	3	1	0	40	20	60	40	100	3:1:0	4
2	MPH207	Maternal and child Health-Advanced	Elective	3	1	0	40	20	60	40	100	4:1:0	4
3	MPH208	Adolescent Health	Elective	3	1	0	40	20	60	40	100	3:1:0	4
4	MPH209	Gender and Health	Elective	3	1	0	40	20	60	40	100	3:1:0	4
5	MPH210	Public Health Nutrition	Elective	3	1	0	40	20	60	40	100	3:1:0	4
6	MPH211	Internship	Core										
7	MPH212	Dissertation	Core										
Total				15	5	00	200	100	300	200	500	20	20

L: Lecture **T:** Tutorials **P:** Practical **C:** Credit **CT:** Class Test **TA:** Teacher Assessment **ESE:** End Semester Examination
Sessional Total: Class Test + Teacher Assessment **Subject Total:** Sessional Total + End Semester Examination (ESE)

General evaluation:

Each semester will have theory exam and practical examination at the end of the semester and in addition the fourth semester will also be evaluated on the basis of the Dissertation.

MASTERS IN PUBLIC HEALTH

A. CORE MODULES (COMPULSORY)

1. Principles and practices of public health:

- Public Health- what it is; causation, prevention, social determinants of health, health systems and health policy
- Health equity
- Environments and health
- Public Health action

2. Health system and policy in developing countries:

- Basic theoretical approaches and concepts used in policy analysis
- Understanding of global and national health policies, including current trends
- Analyse the political system within which policies are made
- Contextual factors that influence to policy change
- Changing global health policy environment

3. Health management: Management principles and practices:

- Basic knowledge of health care systems and the environment in which health care managers and providers function
- Health Programmes: planning, implementation, Monitoring and Evaluation
- Components of strategic management
- Project management
- Behavioural aspects of governmental, faith based and other non – governmental organizations
- Introduction to logistics management
- Introduction to human resource management
- Quality: define quality, its importance in public health, measures to manage and improve equality
- Introduction to Operational Research
- Risk management
- Effective management of Health Management Information Systems (HMIS) and its application
- Public Health Leadership

4. Basic Epidemiology including communicable and non-communicable diseases:

- 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
- Communicable and non-communicable diseases

5. Basic Biostatistics:

- Types of variables
- Scales of measurement
- Measures of central tendency
- Measures of dispersion
- Types of distribution
- Bayes theorem
- Sample/sampling and population distribution
- Central limit theorem
- Type1 and type 2 error and power calculation
- P-value and 95% confidence Interval
- Parametric and non-parametric test
- How to choose the statistical test
- Correlation
- Basics of regression
- One statistical software (SPSS/Stata)

6. Demography and population sciences:

- Factors affecting population
- Measures of fertility and mortality
- Standardisation methods
- Population growth and projection
- Demographic transition
- Implication of rapid population growth
- Demographic dividend or disaster
- Life table
- Urbanization

7. Introduction to health economics:

- Key concepts of economics, micro and macro economics
- Strategizing and prioritizing within scarce resources (decision making)
- Determinants of demand, supply and costs of production
- Concepts of efficiency, effectiveness, equity, elasticity of demand, costing, production, marginal cost analysis, and opportunity cost
- Market model, market failure, and the roles and limitations of markets in health care
- Universal health coverage and role of health care financing
- Principles and application of economic evaluation in health care including Cost Benefit Analysis (CBA) and Cost Effective Analysis (CEA)

8. Health promotion approaches and methods:

- Introduction to health promotion
- Foundations for health promotion
- Social determinants and health promotion
- Communication strategies for health promotion
- Overview of current national health policies, national health programs their health promotion strategies
- Community need assessment for designing an effective health promotion activity
- Evaluation of health promotion plans
- Substance abuse epidemic in parts of India
- Smokeless (chewable) and smoked tobacco addictions in parts of India
- Drunken driving: social and personal responsibilities and control measures
- Stigmatization of health conditions
- Behavioural issues in children and teens: substance abuse, suicide patterns
- TV and other media as influencers of healthy/non healthy lifestyle

9. Introduction to Financial management and Budgeting

- Introduction to financial management
- Tools of financial analysis and planning in health care
- Cash flow, accounts and balancing budgets
- Cost and dividends for health outcomes
- Effectiveness and efficiency
- Sustainability of Health Programs

10. Social and behaviour change, effective communication in Healthcare:

- 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

- Introduction to behaviour change theories and communication
- Health and human behaviour
- Medical anthropology
- 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)
- 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
- Consensus building
- Using audio visual aid in communication
- Etiquettes and professionalism

11. Introduction to RMNCH+A:

- Introduction to the RMNCH+A services – historical context, evolution, coverage and innovations
- Various components of service delivery under RMNCH+A (including GoI programs)
- Maternal, New-born and Child Health (MNCH) services in the country
- Adolescent health
- Role of gender in public health programs
- Evolution of RCH services in the country – Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)
- Innovations in service delivery
- Framework for evaluation of services

12. Introduction to Design and Evaluation of Public Health Programs

- Concepts underlying the design of health programs
- Basic approaches to the design, analysis and interpretation of health programs
- Communicate in public health research
- Framework to evaluate the effectiveness of health programme implementation
- Case Study: how to integrate a package of care for a specific problem into a platform of healthcare delivery
- Process, outcome and impact evaluation

13. Principles of 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
 - Quantitative data and research
 - Mixed methods
- Public health surveillance and research

14. Environment and Occupational health:

- Theories and history of environmental health
- Environmental health policy and legal mechanisms in a national and international context
- Ecosystems in various settings (linking the built environment, transport, housing and green space to human health)
- Environmental pollution, waste disposal and treatment
- Lifestyle and dietary effects on health, food safety and sanitation
- Occupational Health: Hazards at workplace and work safety; Prevention of occupational hazards; Laws related to occupational health; Various government and other schemes for working population in India
- Climate Change & Health
- Biomedical Waste Management
- Management of environmental hazards, natural disasters
- Central Pollution Control Board (CPCB) guidelines
- Environmental health impact assessment

15. Law and ethics in public health

- Public Health laws and ethics
- Human rights in public 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
- Regulations during emergencies and outbreaks
- Addressing newer challenges: Bioterrorism, conflicts and emerging infectious diseases
- Public Health laws in global economy
- Global health hazards and security
- Different forms of power, influential to policy making
- Concept of governance and institutions
- Different theories useful in policy analysis
- Political nature of evidence for policy making in health
- Written and verbal competence in communicating evidence to inform policy

B. 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:
 - Incubation periods
 - Epidemic patterns
 - Modes of transmission
 - Transmission dynamics
 - Measures of infectiousness
 - 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 diseases (NCD) epidemiology:

- Describe and understand the epidemiology of NCDs
 - Cardiovascular diseases
 - Hypertension
 - Diabetes mellitus
 - Cancers
 - Mental health
 - Stroke
 - 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

Stream B2: Health Programme, Policy and Planning

i. Health policy, process and planning:

- Policy making: key components
- Policy framework
- Stake holders in policy making
- Effects of different interest and advocacy groups in influencing health policy
- Translating research in policy making
- Effects of national and international affairs on health policy
- Introduction to different national population, disease control, tobacco control, nutrition, maternal and child health policies
- Short term versus long term policies
- Resources allocation to optimize health
- Using research and data to drive good policy making

ii. Design and evaluation of public health programs (including current NHPs):

- Concepts underlying the design of health programs;
- Basic approaches to the design in health programmes, with a focus on low resource settings
- analysis and interpretation of studies/programs;
- Communication in conducting public health research
- National health programmes in India (including goals, objectives, purposes, organization, man power, sources, activities, roles and responsibilities)

iii. Translating research for Health Policy and Advocacy:

- Different forms of power influential to policy making
- Concepts of Governance and Institutions
- Different theories useful in policy analysis
- Political nature of evidence for policy making in health
- Written and verbal competence in communicating evidence to inform policy
- Critical appraisal of issues in health policy and financing

iv. Current issues in health policy: National and Global perspective:

- Theory explaining public health action, its evolution and application in health policy
- Methods of assessing the health impact of different types of policy; national and global perspective
- Assessing health impacts of different policies across sectors
- Impact of health threats and interventions to counter health threats including crisis management

v. Role of Non-governmental Organizations (NGOs) in health care:

- Health service delivery and program Implementation
- Research and evidence generation
- Training and education
- Inter-sectoral coordination in health including Public Private Partnership
- Advocacy and planning in health care

Stream B3: HEALTH SYSTEM MANAGEMENT

i. Strategic management, Innovations and Entrepreneurship in healthcare

- Strategy: various definitions
- Major concepts and frameworks in strategic management: SWOT, experience curve, portfolio theory, value chain
- Strategic thinking and decision making
- Strategic planning: Environmental, scenario, implementation and evaluation
- Sustainability
- Various sources for financing a new venture: finalize your target audience
- Preparing a business speech, elevator pitch
- Innovations in public health
- Health informatics, e-Health
- Telemedicine, m-Health
- Conflicts management and negotiations in business world
- Business modelling: preparing your own business model
- Peer review of individual business model

ii. Advanced Operations Research

- History of operation research and seven stages of OR
- Safety, Acceptability, Feasibility and Effectiveness (SAFE) in designing Public Health Interventions
- Field interventions and field trials
- Stage 1: Formulate/define organizational problem
- Stage 2: Observe the system
- Stage 3: Create a mathematical model of the problem
- Stage 4: Model validation and application to the problem
- Stage 5: Identification of a suitable alternative

- Stage 6: Results discussion and conclusion
 - Stage 7: Implementation and evaluation of the recommendation
- iii. Advanced Financial management and budgeting**
- Introduction to financial management
 - Tools of financial analysis and planning in healthcare
 - Cash flow, accounts and balancing budget
 - Cost and dividend for health outcomes
 - Effectiveness and efficiency
 - Sustainability of health programs
- iv. Organizational management and services**
- Components of organization: Purpose, Coordination, Division of labour and Hierarchy
 - Project management lifecycle
 - Setting common goals and objectives
 - Analytical thinking
 - Risk identification and control
 - Leadership
 - Priority setting and resource allocation
 - Why organizations fail? learning from case stories
- v. Effective communication in public health:**
- Public speaking
 - Effective Communication: Verbal versus Non – verbal communication
 - Various forms of written communication
 - Evidence based advocacy
 - Consensus building
 - Using audio-visual aid in communication
 - Etiquettes and professionalism

Stream B4: RMNCH+A

i. Reproductive and Sexual 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 and Child Health (MNCH):

- 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. 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

v. 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

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.

Candidates should submit their project plan and preliminary time scale with their chosen topic for dissertation at the end of the internship to their mentor/tutor to seek appropriate approvals before embarking on the full investigation and project. **The internship is worth two (2) credits.**

D. DISSERTATION

At the end of the fourth semester, candidates will submit their **dissertation** on previously chosen and approved topic for assessment. **This will be a 10 credit course.** The dissertation will be evaluated by an internal examiner (60% weightage) and an external examiner (40% weightage) including a viva-voce.

LIST OF ABBREVIATIONS

AEFI	Adverse Event Following Immunization
AIDS	Acquired Immuno-Deficiency Syndrome
BCC	Behaviour Change Communication
CBA	Cost Benefit Analysis
CEA	Cost Effective Analysis
CD	Communicable diseases
CPCB	Central Pollution Control Board
CRS	Civil Registration System
DLHS	District Level Health Survey
GSI	Gender and Social Inclusion
HMIS	Health Management Information System
IDSP	Infectious Disease Surveillance Program
IEC	Information Education and Communication
IPC	Inter Personal Communication
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MCTS	Mother and Child Tracking System
MDG	Millennium Development Goals
MNCH	Maternal, New-born and Child Health
MPH	Master's in Public Health
NCD	Non Communicable Diseases
NFHS	National Family Health Survey
NHP	National Health Policy
OR	Operational Research
PHE	Public Health Education
PPP	Public Private Partnership
RMNCH+A	Reproductive, Maternal, Newborn, Child, and Adolescent health
SBCC	Social Behaviour Change Communication
SDG	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
SRS	Sample Registration Survey
STI	Sexually Transmitted Infections
SWOT	Strength, Weakness, Opportunities and Threats
TB	Tuberculosis
SAFE	Safety, Acceptability, Feasibility and Effectiveness (SAFE)
