

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for Master of Public Health

COURSE STRUCTURE

1ST YEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
SEMESTER I							
THEORY							
1	MPH 101	INTRODUCTION TO PUBLIC HEALTH- A GLOBAL PERSPECTIVE	2	1		30	3
2	MPH 102	PRINCIPLES OF MANAGEMENT IN PUBLIC HEALTH	2	1		30	3
3	MPH 103	EPIDEMIOLOGY & CHANGING HEALTHCARE SECTOR	2	1		30	3
4	MPH 104	HEALTH EDUCATION & HEALTH COMMUNICATION	2	1		30	3
5	MPH 105	HEALTH INFORMATION MANAGEMENT & DECISION MAKING	2	1		30	3
6	MPH 106	RESEARCH METHODOLOGY-I	2	1		30	3
SESSIONAL							
1	MPH 180	PROJECT			6	60	6
2	MPH 181	SEMINAR ON ASSIGNED TOPIC			6	60	6
Total Credit							30
SEMESTER II							
THEORY							
1	MPH 201	HEALTH ECONOMICS	2	1		30	3
2	MPH 202	FINANCE MANAGEMENT & BUDGETING IN HEALTH SECTOR	2	1		30	3
3	MPH 203	APPLICATION OF QUANTITATIVE METHODS IN PUBLIC HEALTH -1	2	1		30	3
4	MPH 204	HEALTH CARE SERVICES	2	1		30	3
5	MPH 205	ETHICS & LEGISLATIONS IN PUBLIC HEALTH	2	1		30	3
6	MPH 206	RESEARCH METHODOLOGY-II	2	1		30	3
SESSIONAL							
1	MPH 280	WINTER INTERNSHIP			6	60	6
2	MPH 281	RESEARCH PROJECT			6	60	6
Total Credit							30

2ND YEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
SEMESTER III							
THEORY							
1	MPH 301	QUALITY MANAGEMNET IN HEALTHCARE	2	1		30	3
2	MPH 302	INVENTORY AND LOGISTICS MANAGEMENT IN HEALTH SYSTEMS	2	1		30	3
3	MPH 303	APPLICATION OF QUANTITATIVE METHODS IN PUBLIC HEALTH -II	2	1		30	3
4	MPH 304	HEALTH INSURANCE & MANAGED CARE	2	1		30	3
5	MPH 305	MANAGING HUMAN RESOURCES FOR HEALTH	2	1		30	3
6	MPH 306	HEALTH POLICIES & RESEARCH IN PUBLICHEALTH	2	1		30	3
SESSIONAL							
1	MPH 380	SUMMER INTERNSHIP			6	60	6
2	MPH 381	RESEARCH PROJECT			6	60	6
Total Credit							30
SEMESTER IV							
THEORY							
1	MPH 401	SOCIAL & BEHAVIOURAL PERSPECTIVE OF HEALTH	2	1		30	3
2	MPH 402	MANAGING DIVERSE HEALTH SERVICES ORGANISATIONS	2	1		30	3
3	MPH 403	HEALTH & ECOLOGY	2	-		20	2
4	MPH 404	ELECTIVES: (any one) 1. 404A: ADVANCED EPIDEMIOLOGY 2. 404B: HEALTH PROGRAM, POLICY AND PLANNING 3. 404C: HEALTH MANAGEMENT 4. 404D: RMNCH+A	4	2		90	6
1	MPH 480	INTERNSHIP			10	100	10
2	MPH 481	MPH DISSERTATION			6	60	6
Total Credit							30

DETAILED SYLLABUS

SEMESTER-I

Paper: INTRODUCTION TO PUBLIC HEALTH: A GLOBAL PERSPECTIVE

Code: MPH 101

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Introduction- Definition, Significance, Evolution & Development of Public & Community Health
- Determinants of Health – Biological, Behavioral, Socio-economic, Cultural, Environmental, Geographical etc.
- Defining the burden: Local to global for chronic diseases, HIV/AIDS, Cardiovascular Diseases (CVD), Obesity, Injury Prevention and Control, Infant Mortality and Poverty

Unit 2:

- Globalization and Health
- Role of Public Healthcare Institutions in Global Health System, Emergency, Disaster Preparedness and Response activities
- Strengthening Healthcare Systems to Improve Health Outcomes: Reference to High, Low and Middle Income Countries

Unit 3:

- Organization & Management of Public Healthcare Delivery system in India: National, State, District and Block Level
- Health Sector Reforms in India: Development Partners in Public health, Public- Private partnership, M-Health/ E-Health
- The Future of the Public Health in the 21st Century: Challenges and Opportunities

Suggested Readings:

1. Schneider. Introduction to Public Health, 3rd Edition. Jones and Bartlett. 2011
2. Public Health Foundations: Concepts and Practices. Andresen and Bouldin Eds. Jossey-Bass 2010. • Introduction to Global Health. Jones and Bartlett
3. Evidence-Based Public Health. Brownson et al. Oxford, 2003.
4. Public Health: What It Is and How It Works, Fifth Edition. Bernard J. Turnock (2012). Sudbury, Massachusetts: Jones and Bartlett Publishers.

Paper: PRINCIPLES OF MANAGEMENT

Code: MPH 102

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Management : Concept & Definition, Characteristics, Science or Arts, Modern Management Concepts and its Implication in Health sector
- Theories of Management: Pre-scientific Management Period, Classical Theories of Management: Administrative management of Fayol ,Bureaucratic Model of Max Weber
- Neoclassical Theories of Behavioral Approach : Elton Mayo & Hawthorne Experiments
- Modern Theory or System Approach, Contingency Approach

Unit 2:

- Functions of Management: Planning, Organizing, Staffing, Directing, Controlling, Motivating and Leading, Managerial skills required to operate a Healthcare Institution.
- Management Techniques & its Application in Health Care Administration
- Feedback loop, MBO/MBR

Unit 3:

- Organisation: Concept of Organization, Formal and Informal Organization, Types of Organisational structure, –Line and Staff, matrix, Net-work, Geographical, Administrative, Matrix Organization with special emphasis to Hospital Organization
- Organisational Chart: Fundamental concepts of organizing, Division of work and Departmentalization. Delegation of Organizational Authority & Time Management

Suggested Readings:

1. Essentials of Management – By Harold Koontz & Heinz Weihrich – 7th Ed. – Tata McGraw Hill
2. Essentials of Management – By Joseph L. Massie – Prentice Hall India.
3. Practice of Management – By Peter Drucker – Allied Publisher.
4. Management: A Global Perspective, By Harold Koontz & Heinz Weihrich
5. Management Challenges for 21 st Century - Peter Drucker

Paper: EPIDEMIOLOGY & CHANGING HEALTHCARE SECTOR

Code: MPH 103

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

<p>Unit 1:</p> <ul style="list-style-type: none">□ Concepts & theories of Health & Disease, Health & Disease Spectrum , Iceberg of Disease□ Epidemiological triad, Principles of Epidemiology, Epidemiology of communicable and non-communicable diseases□ Application of Epidemiological Methods in Disease Control (Observational & Experimental Studies)□ Discussion of Case problems on cohort & case control studies (Association/Causation)
<p>Unit 2</p> <ul style="list-style-type: none">□ Host defence Mechanisms, Types of Immunization, Hazards of immunization, Cold Chain& Cold life, Universal & National Immunization Schedules.□ Screening and Survey of a Disease, Disease Investigation and Reporting,□ Disease monitoring and Surveillance, Discussion with Case Studies
<p>Unit 3</p> <ul style="list-style-type: none">□ Healthcare & it's Changing Scenario, Emergence of new diseases, Prevention and control□ The levels of Healthcare - Development of Public & Private Healthcare Institutions in India

Suggested Readings:

1. Preventive And Social Medicine - Dr. K. Park
2. Text Book Of Community Medicine - V K Mahajan
3. Epidemiology by P.V. Sathe, Popular Prakashan
4. Hospital administration - G.D. Kunders

Paper: HEALTH EDUCATION & HEALTH COMMUNICATION

Code: MPH 104

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Health Education: Principles & Objectives, Levels of Health Education, Educational Methods, Evaluation & Practice of Health Education in India.
- Health Counselling: Introduction, Theories, Process & Techniques.
- Health Care Reporting, Role of NIC & Other Bodies, Research in Health Education

Unit 2:

- Health Communication: Basic Concept & Principles of Communication, Definition, Purpose, Types of Communication
- Communication Process, Directions of Communication: Upward, Downward, Lateral, Factors influencing Communication, Barriers of Effective Communication, How to overcome the Barriers
- Models of communication: Aristotle Model, Shannon and Weaver model, Schramm Model, Laegans Model, Fano Model, Litterer's Model, Westly Maclean's Model.

Unit 3:

- Mass communication & Role of Media in health education
- Information Communication Technologies (ICT) in health care and awareness. (Telemedicine & e-health, community radio)
- Future trends in information and communications systems

Suggested Readings:

1. Health Education – A new approach – L. Ramachandran & T. Dharmalingan
2. Health Communication in the 21st Century, By Kevin B. Wright, Lisa Sparks, H. Dan O'Hair, Blackwell publishing limited, 2013, first edition
3. Health Communication: From Theory to Practice, By Renata Schiavo, Published by Jossey Bash.
4. Health Communication, R.D. Karma Published by Mohit Publications 2008.
5. Counseling Skills for Health Care Professionals, 1st Edition, Rajinikanth AM, Jaypee Brothers, 2010.

Paper: HEALTH INFORMATION MANAGEMENT & DECISION MAKING

Code: MPH 105

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Introduction to Health Information System: Objectives, Concept of Data & Information, Source of Health Information, Importance in Research.
- Electronic Medical Records and its Importance, Data Standards in Public Health
- System Concept, Components of a system, Components of a data Communication system Interfaces & boundaries, Environment of a system, Types of Systems, System Software & Application Software
- Data communication & Networking, Need for Computer Networking, Types of networks: LAN, MAN , WAN; Application of networking in public health

Unit 2:

- Decision Support System (DSS), Definition, Relationship with MIS , Evolution of DSS, Characteristics, Classification, Objectives, Components, Applications of DSS.
- Database Management System (DBMS): Need for using DBMS, Concept of tables, records, attributes.
- SQL, Outsourcing: Concept of BPO, KPO

Unit 3:

- Data Warehousing and Data Mining: Concepts of Data warehousing, data mart, metadata, multi-dimensional modelling
- Online Analytical Processing (OLAP), Online Transaction Processing (OLTP)
- Basics of Computer: Components of computer, Knowledge about computer softwares & programmes commonly used in healthcare sector
- Emerging communications technology in Public Health practice

Suggested Readings:

1. Data Management Soft Ware's – Galgotia
2. Bharat, Bhaskar: Electronic Commerce – Technologies & Applications. TMH
3. Forouzan : Data Communication & Networking, TMH
4. Joseph, P.T.: E-Commerce An Indian Prespective
5. Management Information Systems. M.M.Oka. EPH
6. Management Information Systems, O'Brien , TMH
7. Management Information Systems, Arora & Bhatia , EXCEL BOOKS

Paper: RESEARCH METHODOLOGY –I

Code: MPH 106

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Introduction to Research Methodology: Definition, Objectives of Research, Types of Research, Importance of Research in Public Health,
- Research Design, Features of a good Research
- Research Proposal: Identification & Formulation of a Research Problem
- Research Methods
 - Qualitative (Development of conceptual framework & Qualitative methods: FGDs, in-depth interviews, ethnographies, participatory methods, participant observation etc. Data collection & Recording)
 - Quantitative: Statistical Methods in Public Health Research, Application and Interpretation

Unit 2:

- Sampling and survey methods, Selecting a Sample size, Survey design & Planning, Interview schedule, questionnaire construction, validation etc
- Research Data Collection, Management, Coding procedures, Participatory Research and Analysis (PRA) Methods
- Ethical Aspects in Health Research and Clinical trials.

Unit 3:

- Parametric tests: Analysing Small and large Samples: t- tests, Z – tests, and Chi- square distribution
- Estimation of Population Parameters – Standard Errors, Confidence Intervals, Tests of Significance
- Bibliography: Writing Review of literature and Bibliography

Suggested Readings:

1. Health Research Methods – A Guide for Training in Research Methods, World Health Organization, Second Edition
2. Research Methodology by A.P. Kulkarni Power Publication, Calcutta
3. Research Methodology, Pannneerselvan, PHI Publications,
4. Kothari C R. Research Methodology Methods & Techniques. New Age International Private Ltd., New Delhi:2000
5. Beri G C. Marketing Research. 3rd Ed. Tata McGraw Hill Publishing Company Ltd. New Delhi: 2000
6. Introduction To Epidemiologic Research Methods In Public Health Practice by Susan Bailey, Deepa Handu, Published by Jones and Bartlett Publishers, 1st edition, 2012

SEMESTER-II

Paper: HEALTH ECONOMICS

Code: MPH201

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Introduction to Managerial Economics - Meaning, nature and scope, business decision making- role of a manager, fundamental concepts of Managerial Economics.
- Demand and Supply Analysis - meaning, determinants and types of demand, supply meaning, Law of supply, Elasticity of demand (Price, income and cross price).
- Shifts in Demand and Movement along demand curve, Change in Total Revenue, AR, MR and Price elasticity, Classification of goods: Substitutes and Complements.

Unit 2:

- Production and Cost Theory- Production functions- Short Run and Long Run, Production with One Variable Input, Total Product, Average and Marginal Products, Law of Variable proportions, Relationship between TP, AP and MP, Production decisions, Isoquants, Producer's Equilibrium- Production with Two Variable Inputs, Isoquants – Characteristics, Marginal Rate of Technical Substitution, Laws of Returns to Scale.
- Short Run Costs of Production, Fixed and Variable Costs, Short Run Total, Average and Marginal Cost and Relationship between them, Short Run Cost Curves, Iso-cost Curves
- Market Structures- Market models in different aspects of health care, cases of market failure, roles and limitations of market and government in the organization of health care.
- Pricing and Cost Decisions: Price Discrimination under Monopoly, Average Cost Pricing, Marginal cost pricing, Peak Load Pricing, Limit Pricing, Multiproduct Pricing, Transfer Pricing. Understand issues in measurement of costs and benefits of health care • Understand the principles of economic evaluation as applied to health care • Cost effectiveness analysis in health care interventions • Quality of life and statistics in health economic evaluation including QALY's and DALY's.

Unit 3:

- Health Economics: Definition, Scope & Objectives, Demand & Supply for Health Services, Health as a private and a public good. Population, Health & Economic Development.
- Investment in Public & Private Health, Pattern of Health expenditure in India, Health Financing from various sources –Public, Private, TPA.
- Economic Evaluation of National Health Programmes.

Suggested Readings:

1. Damodaran, Suma – Managerial Economics – Oxford University Press
2. Pindyck and Rubinfeld (Sixth Edition) - Micro Economics – Prentice Hall of India Pvt. Ltd/Pearson Education Salvatore,
3. Dominick - Managerial Economics in a Global Economy –Oxford University Press
4. Health Economics in India Hardcover – by Prasant Panda (Editor), Himanshu Rout , Publisher: New Century Publications; 1 edition
5. Michael Drummond and et al, Methods for the Economics Evaluation of Health Care Programme (Oxford University Press, Second Edition)

Paper: FINANCE MANAGEMENT & BUDGETING IN HEALTH SECTOR

Code: MPH202

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Financial Management- an Overview: Nature, scope & function. Difference between Accounts, Costing, Finance, Taxation, Audit, etc.
- Working capital Management: Need & Estimation of Working Capital, Sources of finance.
- Basic accounting Rules, Classification of accounts, Introduction of accounting standards, Generally Accepted Accounting Principles (GAAP)
- Journal, Ledger and Trial Balance
- Profit vs. Goal maximization, Scope of financial management in decision making areas.
- Preparation of Balance Sheet, Cash Flow & Fund flow statement
- Income Statement

Unit 2:

- Cost Accounting: Fixed / Variable costs, Direct / indirect Costs, Activity Based Costing
- Profit analysis, Breakeven analysis & marginal analysis
- Overhead distribution, ROI and RI

Unit 3:

- Budgeting in Health Sector: Difference between Budget, Estimate & Projection
- Types, Purpose and Importance of a Budget
- Budget Procedure and Administration

Suggested Readings:

1. Basic Accounts & Finance for Non-Accounts – By Prof. D.K.Chatterjee - Himalaya Publishing House.
2. Modern Accounting – By Hanif & Mukharjee
3. Financial Management – By Prasanna Chandra – Tata McGraw Hill.
4. Fundamentals of Healthcare Finance: by Louis C. Gapenski, 2009 □
5. Financial Management of Health Care Organizations: An Introduction to Fundamental Tools, Concepts, and Applications, Blackwell Publishers; January 1998.

Paper: APPLICATION OF QUANTITATIVE METHODS IN PUBLIC HEALTH -I

Code: MPH203

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Introduction, Scope & Application of Statistics in Public Health
- Vital Statistics in Public Health: Rates & Ratios, Health Reports, Measurement of Health& Disease in a Population.
- Survey methods: Quantitative and Qualitative methods used in public health surveys, Collection and presentation of Primary and secondary data
- Tabular and diagrammatic representation: Frequency Distribution, Relative Frequency, Cumulative Frequency, Bar and Pie chart, Histogram

Unit 2:

- Measurement of Central Tendency: Arithmetic Mean, median, mode. Percentile, Quartile
- Measurement of Dispersion – Range, Mean Deviation, Variance, Standard Deviation.

Unit 3:

- Introduction to Probability, Measurement of Probability and Law of Probability for independent events- Conditional Probability
- Baye's Theorem, Probability Distribution, Binomial Distribution, Poison- Population – Sample
- Statistical Inference- Type- I and Type II error.

Suggested Readings:

1. Statistics (Part I and II) - N.G. Das
2. Statistics - Goon Gupta, Dasgupta
3. Business Statistics - G.C. Beri- TMH

4. Aczel – Complete Business Statistics (6th Edition); TMH
5. Anderson, Sweeny, and Williams- Statistics for Business and Economics, (9th Edition);
Thomas Learning
6. Statistical Methods in the Biological & Health Science: J.Susan Milton (McGraw- Hill)
7. An Introduction to Biostatistics, a manual for students in health sciences: P.S.S. Sunder
Rao: J. Richard

Paper: HEALTHCARE SERVICES

Code: MPH204

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Healthcare Delivery System in India: Primary, Secondary, and Tertiary level.
- Issues in Healthcare Delivery System: Accessibility, Efficiency, Equity, Affordability, Quality & Sustainability
- Organization & Management of Public Health Institutions: District Hospitals, Sub- district Hospitals, CHC's, PHC's, Sub-centres, First Referral Units, SNCU & Urban Health Institutions (UPHC)

Unit 2:

- Demography and Population Studies, Vital Events of Life and Its Impact on Demography. Significance And Recording Of Vital Statistics, Human Development Index
- Methods of Demographic Data Collection: Primary and Secondary sources of data collection, Procedures, Uses, dual reporting system – SRS, Data from national health program/disease surveillance, hospital statistics.
- Census: Sex composition, factors affecting sex composition, Age structure, Population pyramids, impact of various demographic processes on the age structure. Comparison – developed and developing countries. Census and Its Impact On Health Policies

Unit 3:

- The National Health Mission: Goals, Strategies, Components & Outcome of National Health Mission, Framework for Implementation of National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), State & District Health Mission.
- Introduction to National Health Policy – 1983, 2002 & 2017. National Population Policy 2002, 2005.
- National Health Programmes – Objectives, Targets, Action plan, Achievements and constraints of National Health Programmes.

Suggested Readings:

1. Preventive And Social Medicine - Dr. K. Park
2. Text Book Of Community Medicine - V K Mahajan
3. Text Book Of Community Medicine - Prabhakar Rao
4. Hospital & Health Services Administration-Principles & practices, Tabish, OUP

Paper: ETHICS & LEGISLATIONS IN PUBLIC HEALTH

Code: MPH205

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1

- Law & Ethics: Origin of Law, Code of medical ethics, The Hippocratic Oath, Declaration of Geneva, Law & ethics -a comparison.
- Medical ethics: Basic issues, importance, ICMR guidelines of medical research- death, dying & incurable ill patient. Euthanasia. Ethical Principles in Public Health Practice, Developing and implementing ethics and values in a Public Healthcare Institution.
- Medico- Legal aspects of healthcare: Role of professional bodies such as IMC, IMA, MCI. Duties & responsibilities of doctors, Rights of a Doctor & Patient, Informed Consent, Professional negligence, Professional misconduct & Privileged communication, Disciplinary Committee & Penal Procedures.

Unit 2:

- Healthcare Legislations in India: The Consumer Protection Act- Redressal Agencies & Forums, Medical Negligence & Compensation, Clinical Establishment Act, Medical, Termination of Pregnancy Act, The Transplantation of Human Organs Act, PNDDT Act, The Registration of Birth and Death Act, Biomedical Waste Management & Handling Rules.

Unit 3:

- Law of Torts: Meaning, Essential conditions of liability in Tort, Principle of Omission & Commission with examples.
- Preventive Steps for Doctors/Hospitals to Avoid Litigation: High Risk Patient & Consent Form, Life Support, Dying Declaration, Issue of Death Certificate, Post Mortem
- Illustrative Cases of Medical Negligence in India: Surgery & Medicine, Anaesthesia, Obstetrics & Gynecology, Pediatrics, Other Disciplines

Suggested Readings:

1. Industrial Laws: N.D.Kapoor
2. Medical Negligence & Compensation – By Jagdish Singh – Bharat Law, Jaipur.
3. Medical Negligence & Legal Remedies – By Anoop K. Kaushal – Universal.
4. Medico-legal Aid to Hospitals & Doctors, with Consumer Protection Law – By M.S. Pandit & Shobha Pandit – Pandit Publications.

Paper: RESEARCH METHODOLOGY – II

Code: MPH206

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

<p>Unit 1</p> <ul style="list-style-type: none">□ Testing of Hypothesis and Significance – Introduction & Concept of Errors□ Parametric Tests–Small samples & large samples & Quantitative and qualitative data – ANOVA, F test, Multivariate Analysis
<p>Unit 2</p> <ul style="list-style-type: none">□ Non-parametric Tests: Correlation – Concept and Computation of Correlation CoefficientRegression - Concept and Computation of Regression Coefficient
<p>Unit 3</p> <ul style="list-style-type: none">□ Application of statistical software's in data management and analysis – SPSS/Istat/ Systatetc.

Suggested Readings:

1. Business Statistics - G.C. Beri- TMH
2. Aczel – Complete Business Statistics (6th Edition); TMH
3. Anderson, Sweeny, and Williams- Statistics for Business and Economics, (9th Edition); Thomas Learning
4. Research Methodology, Pannneerselvan, PHI Publications,
5. Kothari C R. Research Methodology Methods & Techniques. New Age International Private Ltd., New Delhi:2000
6. Beri G C. Marketing Research. 3rd Ed. Tata McGraw Hill Publishing Company Ltd. New Delhi: 2000
7. Statistical Methods in the Biological & Health Science: J.Susan Milton (McGraw- Hill)
8. An Introduction to Biostatistics, a manual for students in health sciences: P.S.S. Sunder Rao: J. Richard

SEMESTER-III

Paper: QUALITY MANAGEMENT IN HEALTHCARE

Code: MPH301

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1

- Fundamentals of Quality Management - Definition, Objectives, Principle & Constraints, Theories- Deming, Crosby, Juran, Determinants of Quality: Structure – Process – Outcome. Approaches of Quality Improvement- QC, QA, CQI, TQM
- Continuous Process Improvement, Statistical Process Control (SPC), Quality Systems, Benchmarking, Quality Function Deployment (QFD)
- Application of Six Sigma in Health Care

Unit 2

- Organization for Quality Improvement in Public Health - Quality Teams (QT) and Quality Control Circles (QCC), Quality Assurance (QA) and Quality Improvement.
- Organization wide Quality Improvement fundamentals: Designing Quality Improvement models of daily Patient Care.
- Assessing Quality Health Care, Attributes of Quality in Health Care and Relationship between patient satisfaction and utilization of services.

Unit 3:

- Importance of Medical Audit & Accreditation in ensuring Quality Health care: NABH, NABL, BIS, ISO- Documentation and Certification, ISO 14000, ISO 9000 and benefits of ISO certification.

Suggested Readings:

1. Raandi Schmidt J. Trumbo and R. Jonson, Quality in Health Care Sector – ASQC Quality – Press.
2. Quality Improvement in Health Care, 2nd Ed, Nelson Thrones
3. Sridhar Bhat, Total Quality Management, Himalaya House publications, Mumbai, 2002
4. Sundara Raju, S.M., Total Quality Management: A Primer, Tata McGraw Hill, 1995. Srinivasan, N.S. and V. Narayana, Managing Quality- concepts and Tasks, New Age International, 1996.

Paper: INVENGTORY & LOGISTICS MANAGEMENT IN HEALTH SYSTEMS

Code: MPH302

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1

- Inventory Control: Meaning, Objectives & Scope of Inventory Control, Classification of Inventory
- Techniques of Inventory Control: ABC, VED, FSN
- Lead-time, Buffer stock, Reorder level, Two Bin System, Periodic Inventory, EOQ models with shortage, without shortage and with price breaks.

Unit 2

- Principles of Materials Management: Definition, Scope & Objectives, Materials Planning with forecasting & Budgeting. Classification of Materials- Consumables & Non consumables

Unit 3:

- Purchase Management: Objectives, Legal aspects of purchasing, Out Sourcing of Services, Purchase system- Centralized, Decentralized, & Local purchase, Selection of Suppliers- Tendering procedures, Analyzing bids, Price negotiations, Issue of purchase orders, Rate Contracts, Follow up action, Safety Stock & Lead time, Receipt & Inspection of Materials, Distribution, Standardization, Codification, Preparation of defect/Discrepancy Reports.

Unit 4

- Store Management: Organization & layout, Functions of Store Manager, Materials handling, Flow of goods/FIFO, Security of stores, Disposal of scrap/unserviceable materials, Sub-stores in various departments, Physical stock taking, Role of computers in Stores Management
- Medical Stores: Functions, Store Monitoring, Expiry Dates & Action, Cold Chain

Suggested Readings:

1. Shakti Gupta, Sunilkanth – Hospital Stores Management, Jaypee Brothers
2. Srinivasan A.V. (ed), Managing a modern hospital, Chapters 6, 7, 8, 9, Response Books, New Delhi, 2000.
3. Gopalakrishna, P., Materials Management, Prentice Hall, New Delhi, 1997.
4. Gopalakrishna, P., Purchasing and Materials Management, Tata MC.Graw Hill, New Delhi, 1995

Paper: APPLICATION OF QUANTITATIVE METHODS IN PUBLIC HEALTH- II
Code: MPH303
Contacts Hours / Week: 2L+1T
Credits: 3

Course Content:

Unit 1: <ul style="list-style-type: none">□ Evolution of OR, Application of O.R Techniques - PERT, CPM, Simplex method, etc.
Unit 2 <ul style="list-style-type: none">□ Linear Programming: Introduction, Mathematical Formulation of a LPP, Graphical Solution Method, Various types of LPP and its applications in Public Health□ Decision Tree Analysis: Introduction, Decision making Problems & Process, Decision under uncertainty or risk.
Unit 3 <ul style="list-style-type: none">□ Queuing Theory: Introduction, Elements of Queuing systems, Operating Characteristics of Queuing system, classification of queuing models, Probability Distribution in queuing system□ Network Models: PERT, CPM. Advantages, limitations, Differences, Use in Resource Allocation

Suggested Readings:

1. Introduction to Operations Research- Kanti Swarup, P. K.Gupta & Man Mohon, Sultan Chand & Sons Publications, New Delhi.
2. Hamdy. A. Taha, "Operations Research an Introduction", Pearson Education, 17th Edition, 2002. 2. S.D Sharma, "Operation Research", Kedar Nath and Ram Nath - Meerut , 2008.
3. Roger G., Operations Management - Decision Making in Operations Function, rawHiII., New Delhi.
4. Albright S, Winston W, Zappe C. (2009). Data Analysis and Decision Making. 4th Edition, Mason, OH: South-Western Publications
5. International Journal of Operations and Quantitative Management, (IJOQM) released by Nirma Institute of Management – Ahmedabad

Paper: HEALTH INSURANCE & MANAGED CARE

Code: MPH304

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

<p>Unit 1</p> <ul style="list-style-type: none">□ Introduction to insurance: History and Evolution of Insurance in India, Principles of insurance, insurance documentation.□ Health Insurance: Concept of Asset, Risk & Pooling. Insurance for the Patient, Premium and factors influencing premium for various policies. Managed Care: The Key “Ingredients” of Managed Care, Health insurance products, Professional Indemnity Schemes for doctors□ Medical Care system & Health Insurance System in different countries (USA, UK, India) Role of Insurance in Economic Development of a country
<p>Unit 2</p> <ul style="list-style-type: none">□ Evolution of Health Insurance in India, Social security Schemes in India– CGHS, ESI,□ Insurance schemes: RSBY, JSY, Pradhan Mantri Suraksha Bima Yojana
<p>Unit 3</p> <ul style="list-style-type: none">□ Insurance Regulatory Authority of India (IRDA): Role, function and Control□ Third Party Administration- Function, Importance & Challenges,□ TPA: Intermediary between provider & Patient, Role of Health Insurance companies

Suggested Readings:

1. IRDA Regulations on Health Insurance, GOI, New Delhi
2. U. Jawaharlal (editor), Insurance Industry, the current scenario, the ICFAI University Press, Hyderabad, 2005.
3. Commercial Laws: N. D. Kapoor
4. Commercial Laws: Sen & Mitra

Paper: MANAGING HUMAN RESOURCES FOR HEALTH

Code: MPH305

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

<p>Unit 1</p> <ul style="list-style-type: none">□ Human Resource Management in Health Care Organization: Definition & Importance, Therole of Human Resources in healthcare organizations.□ HR as a strategic tool: Staffing & Manpower planning in Healthcare Institutions, Systems Approach to Staffing, Staff Recruitment & Selection, Training and Development, Training Needs, Types of Training. Case presentation and discussion with reference to Health Sector
<p>Unit 2</p> <ul style="list-style-type: none">□ Job analysis, Job description, Job evaluation, Job enrichment□ Workforce productivity, Measuring Performance, Providing feedback & Performance Appraisal
<p>Unit 3</p> <ul style="list-style-type: none">□ Leadership, Leadership Styles, Motivation, Motivational Theories, Motivational Techniques□ Controlling Functions, Steps in Controlling, Types of Controlling, Control Techniques□ Globalization and the health care workforce, Managing Workforce Diversity in Healthcare

Suggested Readings:

1. Aswathappa, Human Resource & Personal Management, TMH
2. Gomez –Mezia, Managing Human Resources, Pearson Education
3. Fried BJ, Fottler MD, ed. Human resources management in healthcare: managing for success. 3rd ed. Chicago, IL: Health Administration Press; 2008
4. Ellis L, Morrow D, Bradley A. Case 3: Performance feedback now and then. In: Fried BJ, Fottler MD, ed. Human resources management in healthcare: managing for success. 3rd ed. Chicago, IL: Health Administration Press; 2008: 523- 528
5. Case Study 10: Too much diversity? In: Nkomo S, Fottler M, McAfee RB. Applications in Human Resource Management. 5th ed. US: Thompson/South-Western; 2005: 37-39

Paper: HEALTH POLICIES & RESEARCH IN PUBLIC HEALTH

Code: MPH306

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- Introduction to Health Policies: Key Characteristics of Health Policy and Systems Research, Elements of HPSR- Health systems • Health policy • Health system development or strengthening • Health policy analysis
- Health Planning in India (Committees, Planning commission, Five year plans, National Health Policies) Health for all.

Unit 2:

- Policy making: Foundations of health policy making, Theories of policy process
- Equity, Access and Quality, Policy Analysis & Policy Brief, Writing a Policy Brief & Implementation
- Policy and Strategy, Formulation of Strategy, Overview of Health Policies and Five Year Plans.

Unit 3

- Overview of Health Systems: Comparative Health Systems, National Health Policies and Programmes
- Health Sector Reforms: Public-Pvt Partnerships, Role of health services research in health policy

Suggested Readings:

1. Park K: 2005. Text Book of Preventive and Social Medicine. Banarsidas Bhanot Publishers: Jabalpur. 18th Ed.
2. Goel S L. 2001. Health Care System and Management: Primary Health Care management. Deep & Deep Publications: New Delhi. Vol 4
3. Essentials of Public Health - BJ Turnock. Jones & Bartlett, 2007
4. Oxford Textbook of Public Health, 4th edn

SEMESTER-IV

Paper: SOCIAL & BEHAVIOURAL PERSPECTIVE OF HEALTH

Code: MPH401

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1:

- The Ecological Model, Overview of Key Health Behaviour Theories.
- Individual Behaviour: Personality – Learning – Attitudes – Perception – Motivation – Ability. Individual influences on health, Health Belief Model (HBM), Theory of Reasoned Action/Planned Behaviour
- Individual influences on health: Social Cognitive Theory (SCT) & Trans theoretical Model/Stages of Change (TTM)

Unit 2:

- Organizational influences on Health: Schools, Workplace
- Community influences on health and health behaviour
- Social Determinants: Race, Ethnicity, and Gender, Socioeconomic factors and Health Care Access, Social ecological models of health inequality, Disparities in health care access and treatment

Unit 3:

- Media & Policy influences on Health
- Modelling Social Networks in Public Health

Suggested Readings:

1. Baranowski, T. (1997). Families and Health Actions. In D. S. Gochman (Ed.),
2. Handbook of Health Behavior Research I, Personal and Social Determinants. Plenum Press. New York.
3. Organizational Behaviour – Stephen Robbins, – Prentice Hall 5.
4. Glanz, K., Rimer, B.K., & Viswanath, K. Health Behavior and Health Education: Theory, Research and Practice 4th Edition. San Francisco, Jossey Bass.
5. Keane, C. A Network Approach to Public Health Research in Emerging Methods in Community Public Health Research. New York: Springer.

Paper: MANAGING DIVERSE HEALTH SERVICE ORGANIZATIONS

Code: MPH402

Contacts Hours / Week: 2L+1T

Credits: 3

Course Content:

Unit 1

- Organizational Culture: Meaning, significance – Organizational climate – Implications on organization behaviour –
- Organizational change – Need and nature – Causes of change – Resistance to change – Management of change in healthcare organizations, Cultural Diversity in Health Care.

Unit 2

- Organization & Management of Public Health Institutions: District Hospitals, Sub- district Hospitals, CHC's, PHC's, Sub-centres, First Referral Units, SNCU & Urban Health Institutions (UPHC)
- Management of Private-for-profit Hospitals- Concept of Corporate Hospitals- Nursing Homes - Other hospitals.
- Management of Private- not – for –profit sector, NGO'- Voluntary Agencies.
- International Health Organizations: Red Cross, WHO and Other United Nations Agencies

Suggested Readings:

1. Organizational Behaviour – Stephen Robbins, – Prentice Hall 5.
2. Organisational Behaviour – Fred Luthans, – Tata Mc Graw hill
3. Managing Health Services Organizations and Systems, Sixth Edition (MHSOS), Beaufort B. Longest; Jr.& Kurt J. Darr, Published by Health Professions Press (2008)
4. Park K: 2005. Text Book of Preventive and Social Medicine. Banarsidas Bhanot Publishers: Jabalpur. 18th Ed.

Paper: HEALTH & ECOLOGY

Code: MPH403

Contacts Hours / Week: 2L

Credits: 2

Course Content:

Unit 1:

- Ecology & Environment: Definition, Concept, Components, Major environmental health problems in Industrialized and Developing countries.
- Environmental Pollution & its Impact on Human Health - Sources, Health Problems and Prevention of Air (Indoor/Outdoor), Water, Noise, Soil, Nuclear, Solid waste, Biomedical waste, e- waste etc. Global Warming, Climate Change, Ozone Depletion, Acid Rain etc.
- Environment & Health Impact Assessment- Concept, Steps and Application

Unit 2:

- Achieving Sustainable Development: Definitions & Concept, Introduction, principles, models, Rights Based Approach for Development and Health
- Brief outline of the Environment (Protection) Act 1986- Importance for Hospitals- Legislation vs. Social obligation of Healthcare Settings. Eco-friendly environmental practices -Waste management
- Developmental Planning for Healthy Settings in Cities- Villages- Towns. Community Organization and Participation

Unit 3:

- Occupational Health: Ergonomics, Control of Physical, Chemical, Mechanical, Psychosocial and Biological Environment at Workplace, Occupational Diseases.
- Occupational Safety in Healthcare Organizations: Occupational Hazards in a Healthcare Setting, HAI & Role of Hospital Infection Control Committee

Suggested Readings:

1. Environmental and Health Impact Assessment of Development Projects: edited by Robert G. H. Turnbull, Elsevier Sciences Publication
2. Environmental Science, S C Santra, Publisher: New Central Book Agency, Calcutta 2001
3. Perspectives in Environmental Health -Vector and Water Borne Diseases, Mukhopadhyay Aniruddha, De A K
4. Occupational Health: Management and Practice for Health Practitioners, S. P. Hattingh, 3rd edition.

ELECTIVES:

Paper: Advanced Epidemiology
Code: MPH 404 A
Contacts Hours/Week: 4L+2T
Credits: 6

Course Content:

<p>Unit 1:</p> <ul style="list-style-type: none">□ Revision of Basic Epidemiology – Run down of Semester 1.□ Directed acyclic graphs and conceptual framework□ Confounding Bias and methods to Reduce Confounding, Selection Bias and Information Bias, Measures of Validity and Reliability, Theories of Causation & Association□ Advanced design in Clinical Trials□ Systematic review and meta-analysis overview□ Public data sources: SRS, CENSUS, NFHS, DLHS, MCTS, CRS etc
<p>Unit 2:</p> <ul style="list-style-type: none">• Essentials of Biostatistics: Introduction to Data & its Presentation, Principles of Regression, Linear regression, Logistic regression, Poisson regression, Cox Proportional hazard regression, Regression diagnostics, Multilevel modelling, Choosing the best model in Health research• Critical Appraisal of Published articles in Epidemiology
<p>Unit 3:</p> <ul style="list-style-type: none">• Survey Design and methods: Steps involved in planning and conducting a research Project, Pre-survey formative research, Sampling and calculating sample size, Study tool development, Strengths and weaknesses of Data Collection Methods, Data Analysis & Interpretation, Ethical issues in research, Quality control and assurance in surveys
<p>Unit 4:</p> <ul style="list-style-type: none">• Communicable disease epidemiology: Burden of Communicable disease in Population (TB, Malaria, Leprosy, Polio, STI's, AIDS, Filaria, Ebola, Chikungunya, Measles, Hepatitis, COVID-19) Factors affecting for emergence and re-emergence of infectious diseases and disease transmission, Role of genetic and environmental factors in disease causation, Basic Reproductive Number, Secondary attack rate, Prediction of an epidemic and Mathematical Models of infection dynamics, Integrated Disease Surveillance Program (IDSP), Live outbreak Investigation, Vaccine efficiency and Impact assessment, Adverse Event following Immunization, Anti /microbial Resistance (AMR)

Unit 5:

- **Non Communicable disease epidemiology:** Burden of Non Communicable disease (NCD's in Population (CVD's, Stroke, Obesity, Hypertension, Diabetes mellitus, Cancer, Mental health, Burns/trauma/accidents), Identification of High risk population and risk factors, Comprehend Policies, Population and Public health approaches to the prevention of common NCD risk factors (physical inactivity, unhealthy lifestyle and diet, substance abuse), Understanding NCD interlink with Communicable Diseases, how women and child health, health of girl child is linked to prevention of NCD's, Importance of population based screening for detection of NCD's in population, Familiarize with current projects targeting the prevention of NCD's and innovations in prevention

Unit 6:

- Understanding of Drug Resistance and its Mechanisms
- Drug-Food Interaction, Drug-Disease Interaction, Drug – Drug Interaction

Suggested Books:

1. Introduction to Epidemiologic Research Methods In Public Health Practice by Susan Bailey, Deepa Handu, Published by Jones and Bartlett Publishers, 1st edition, 2012
2. Preventive and Social Medicine - Dr. K. Park
3. Text Book Of Community Medicine - V K Mahajan
4. Epidemiology by P.V. Sathe, Popular Prakashan
5. Drug Interactions, by Philip D Hansten & John Horn
6. Essentials of Bio-statistics- Indranil Saha & Bobby Paul

Paper: Health Programme, Policy and Planning

Code: MPH 404 B

Contacts Hours/Week: 4L+2T

Credits: 6

Course Content:

Unit 1:

Health policy, process and planning:

- Policy making: key components
- Policy framework
- Stake holders in policymaking
- Effects of different interest and advocacy groups in influencing health policy
- Translating research in policymaking
- 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 policymaking

Unit 2: 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)

Unit 3: Translating research for Health Policy and Advocacy

- Different forms of power influential to policymaking
- 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

Unit 4: 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

Unit 5 : Role of Non-governmental Organizations (NGOs) in healthcare:

- 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 healthcare

Suggested Books

1. K.Park :2005.TextBook of Preventive and Social Medicine. Banarsidas Bhanot Publishers: Jabalpur. 25th Ed.
2. Goel SL.2001.Health Care System and Management: Primary Health Care management. Deep & Deep Publications: New Delhi. Vol 4
3. D.K. Taneja's Health Policies and Programmes in India
4. Managing Health Services Organizations and Systems, Sixth Edition (MHSOS), Beaufort

Paper: HEALTH MANAGEMENT
Code: MPH 404 C
Contacts Hours/Week: 4L+2T
Credits: 6

Course Content:

Unit 1: **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
- 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

Unit 2: **Advanced Operations Research**

- 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

Unit 3: **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

Unit 4: 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 styles & theories
- Priority setting and resource allocation
- Case Studies

Unit 5 : 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, Preparing a business speech, elevator pitch

Suggested Books:

1. Health Care Administration: Managing Organized Delivery Systems, Fifth Edition, by Lawrence F. Wolper
2. Hospitals & Health Care Organizations: Management Strategies, Operational Techniques, by David Edward Marcinko & Hope Rachel Hertico
3. Financial Management Strategies for Hospitals and Healthcare Organizations: Tools, Techniques,
4. by David Edward Marcinko & Hope Rachel Hertico
5. Handbook of Healthcare Operations Management: Methods and Applications by Carri W. Chan & Linda V. Green (auth.) & Brian T. Denton (eds.)

Paper: RMNCH+A
Code: MPH 404 D
Contacts Hours/Week: 4L+2T
Credits: 6

Course Content:

<p>Unit 1:</p> <ul style="list-style-type: none">• 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
<p>Unit 2:</p> <ul style="list-style-type: none">• 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, Preventing peri-natal and infant mortality,• Infectious Disease and Child Survival,• Nutrition and Growth in Maternal and Child Health, Legislations and programs in MCH
<p>Unit 3:</p> <ul style="list-style-type: none">• Adolescent Health: Adolescent Health Status Globally and 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.
<p>Unit 4:</p> <ul style="list-style-type: none">• Gender and Health: Understanding concepts - Gender, vulnerable populations, gender equality and equity and emerging issues,• Social exclusion, Difference between sex and gender and how these variables, combined with other forms of social exclusion impacts on health, 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, Understand realities of discrimination from the grass root perspective

- Identify good practices in Gender and Social Inclusion (GSI) within India, Toolkits for including GSI in public health research, programs, policies and advocacy

Unit 5:

- **Public Health Nutrition:** Basic concepts and principles of foods and nutrition relevant to human health, Population based dietary and nutritional recommendations,
- Concept, purpose and scope of Public Health Nutrition, 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 nutritional needs assessment, Recognize the pillars of a healthy community, 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),
- Nutrition Intervention programmes in India, principles of nutrition education and understanding of project planning and management in nutrition programmes, Inter-sectoral nature of nutrition and food policy, Salient features of various ongoing nutrition programs,
- Under/over nutrition , energy content of foods, Nutrition during adulthood & Nutrition during old age, macro and micronutrient metabolism and uses.

Suggested Books:

1. Preventive And Social Medicine, Dr. K. Park, Bhanot Publications.
2. Implementing Women's Sexual Health and Reproductive Health Rights in South Asia, R Sohail, CBS Publishers & Distributors
3. Shils, M. E., Olson, J., Sikhe, M. and roos, C (2003) Modern Nutrition in Health and Disease, 9th Edition, Williams & Williams. A Beverly co. London
4. Advanced nutrition in Human Metabolism, 4th Edition, Thomson Wordsworth Publication, USA
5. Shanti Ghosh: The Feeding and Care of Infants and Young Children, VHAI, 6th Edition
6. Nutrient Requirements for Indians Recommended Dietary Allowance, ICMR-NIN, 2020

GUIDELINES FOR PREPARATION OF PROJECT WORK

Program requires mandatory fulfillment of a project work at the end of each Semester of the coursework. The Project should have a direct or indirect relevance to areas of Public Health and desirably be aligned to the choice of the Elective Paper. Each student has to individually conduct this project work. Students can choose a project on any of the categories:

- Any research project following the research methods studied in that particular semester.
- A review of a health policy or an issue of public health importance.
- An exploratory study in the area of public health.
- A health management issue.
- A systematic review in health studies area.

Project Process

- a. Allocation of a project supervisor. A minimum of 1 and maximum of 2 co-supervisors are allowed.
- b. In consultation with the main project supervisor and co-supervisor, the student should select any topic that falls into the category of the project described above to work on.
- c. A brief synopsis of the project, consisting of the title, background, objectives and proposed methods (data collection tools) of the study, with outline analysis plan should be submitted to the guide.
- d. For survey of human participants, consent and information sheets for participants needs to be submitted for clearance from ethics committee.
- e. On approval of the ethics committee, and concerned authorities the data collection can be undertaken in the time period allocated for the same.
- f. A project report described as under has to be presented and defended as part of the assessment and examination for the project work in the time period specified.

Project Report

The project report shall follow the guidelines as specified as under.

- 1 hard and 1 soft copy of the project report has to be submitted to the supervisor within the time specified.
- The report shall not exceed 50 pages and maintain standard format. It should have 1.5 lines spacing with 12 point Times New Roman font, and justified.
- The report should include the title page, certificate of fulfillment (duly signed by supervisor and co-supervisors) content page, introduction, review of literature, objectives, methods, results, discussions, recommendations, conclusions, any limitations, references and annexures.
- The hard copy of the Project report should be spiral bound while the Final MPH Dissertation should be hard bound.