

**SCHEME OF STUDY**

**AND**

**SYLLABUS**

**FOR THE COURSE OF**

**MASTER IN PUBLIC HEALTH**  
**(YEAR 2019-20, 2020-21, 2021-22)**

**Choice Based Credit System**

**(DURATION: 2 years, 4 semesters)**



## SCHEME OF STUDY

SEMESTER- I							
SUBJECT CODE	NAME OF THE SUBJECT	L	T	P	HOURS PER WEEK	CREDITS	MARKS
MPH-101	Basic Concepts in Public Health	4	1	0	5	4	100
MPH-102	Basic Epidemiology-I	4	1	2	7	6	100+50
MPH-103	Maternal and Child Health	4	1	0	5	4	100
MPH-104	Basic Computing and Research Methodology	4	1	2	7	6	100+50
MPH-105	<b>Open Elective –</b> Environmental Health	4	1	2	7	6	100+50
MPH-106	Basic Concepts in Life Sciences <b>OR</b> Basic Concepts in Social Sciences	2	0	0	2	NC	S/US
	Seminar	-	1	-	1	NC	S/US
<b>TOTAL</b>					<b>34 HOURS</b>	<b>26</b>	<b>650</b>

PLEASE NOTE
There will be a Bridge Course (MPH-106 - Non-Credit) of 50 marks in the first semester. Marks obtained in this course will not be included in the grand total.

SEMESTER- II							
SUBJECT CODE	NAME OF THE SUBJECT	L	T	P	HOURS PER WEEK	CREDITS	MARKS
MPH-201	Biostatistics	4	1	2	7	6	100+50
MPH-202	Occupational Health and Safety Management	4	1	2	7	6	100+50
MPH-203	Survey Methods	4	1	2	7	6	100+50
MPH-204	Public Health in Emergencies, Disasters and Conflicts	4	1	0	5	4	100
MPH-205	Open Elective - Genetics and Public Health <b>OR</b> Global Health	4	1	0	5	4	100
	Seminar	-	1	-	1	NC	S/US
<b>TOTAL</b>					<b>32 HOURS</b>	<b>26</b>	<b>650</b>

# DETAILED SYLLABUS OF STUDY

SEMESTER- III							
SUBJECT CODE	NAME OF THE SUBJECT	L	T	P	HOURS PER WEEK	CREDITS	MARKS
MPH-301	Basic Epidemiology-II	4	1	2	7	6	100+50
MPH-302	Health Economics and Service Planning	4	1	0	5	4	100
MPH-303	Health Informatics	4	1	2	7	6	100+50
MPH-304	Elective-Health for Special Groups <b>OR</b> Public Health in India and World	4	1	0	5	4	100
	Internship*/community outreach activities/ Synopsis				6	4	25 + 25+50
<b>TOTAL</b>					<b>30 HOURS</b>	<b>24</b>	<b>600</b>

SEMESTER- IV							
SUBJECT CODE	NAME OF THE SUBJECT	L	T	W*	HOURS PER WEEK	CREDITS	MARKS
MPH-401	Public Health Law, Ethics and Human Rights	4	1	2	7	6	100+50
MPH-402	Health Education and Counseling	4	1	2	7	6	100+50
MPH-403	Dissertation				24	12	300
<b>TOTAL</b>					<b>38 HOURS</b>	<b>24</b>	<b>600</b>

W\* (Workshop)

<b>Total Credits = 100</b>	Semester I = 26	<b>Total Marks = 2500</b>	Semester I = 650
	Semester II =26		Semester II =650
	Semester III =24		Semester III =600
	Semester IV = 24		Semester IV = 600

Open Elective	Department Elective
Environmental Health	Public Health in India and World
Genetics and Public Health	Health for Special Groups/Populations
Global Health	

# SEMESTER I

MPH-101		BASIC CONCEPTS IN PUBLIC HEALTH	
		Theory	80 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
It will introduce about the definition, concept, history, dimensions, determinants and interdisciplinary nature of Public Health.			
UNIT I	Definition and Concept of Health, Dimensions of Health, Spectrum of Health, Positive Health, Determinants of Health, (Social, Economic, Cultural, Environmental, Education, Genetics, Food and Nutrition).Indicators of health, Burden of disease, Health promotion, Concept of Prevention, levels of preventions, Intervention, Assessing Health needs, Health for all, Millennium Development Goals Sustainable Development Goals		
UNIT II	Definition and Concept of Public Health, Historical aspects of Public Health, Changing Concepts of Public Health, Public Health versus Medical Care, Unique Features of Public Health, Public Health as a System. Changing Roles, Themes and Paradigms in the Health System, Public health in Indian context		
UNIT III	Interdisciplinary nature of Public Health, Role of different disciplines in Public Health, Scope of Public Health, Controversies in Public Health, Changing pattern of Health, Present Scenario of Public Health, Future challenges of Public Health.		
UNIT IV	The infrastructure of Public Health, Human resources in Public Health, Information resources, Organizational resources. Understanding and Measuring health, Analyzing Health Problems for Causative Factors. Lessons from a Century of progress in Public Health. Limitations of 21 <sup>st</sup> Century Public Health, need for effective Public Health System,		
NOTE:	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.		
Essential Reading			
1.	K. Park, 2015 (23 <sup>rd</sup> edition), Textbook of Preventive and Social Medicine, Banarsidas Bhanot.		
2.	M.C. Gupta and B.K. Mahajan, 2013 (4 <sup>th</sup> edition), Textbook of Preventive and Social Medicine, Jaypee Brothers Medical Publishers (P) Ltd		
3.	J.S. Mathur, 2008(11nd edition), Textbook of Preventive and Social Medicine, CBS publisher.		
4.	Roger Detels, James McEwen, Robert Beaglehole and Heizo Tanaka 2009 (5th edition), Oxford Textbook of Public Health, Helen Liepman.		
5.	Sunderlal, Aadarsh, Pankaj, 2007 (2 <sup>nd</sup> edition), Textbook of Community Medicine, CBS Publishers & Distributors.		
6.	Kirch, Wilhelm, 2008 (1 <sup>st</sup> edition), Encyclopedia of Public Health, Volume 1 & 2, Kluwer Academic Publishers.		
7.	Mary -Jane Schneider and Henrey Schneider, 2006 (2nd edition), Introduction to Public Health, Jones and Bartlett Publishers.		

Reference Books	
1.	Richard Skolnik, 2008 (1 <sup>st</sup> edition), Essentials of Global Health, Jones and Bartlett Publishers.
2.	Michael H. Merson, Robert E. Black, and Anne J., Mills, 2005 (2nd edition). International Public Health: Diseases, Programs, System and Policies, Jones and Bartlett Publishers.
3.	Louis Rowits, 2006 (1 <sup>st</sup> edition), Public Health for the 21st Century, The Prepared Leader, Jones and Bartlett Pub.
4.	Bernard J. Turnock, 2009 (4th edition), Public Health: What it is and How it Works, Jones and Bartlett Pb
5.	Soben Peter, 2003 (3rd edition), Essentials Of Preventive And Community Dentistry.
6.	M. J. Rosenau, John M. Last, K. Fuller Maxcy, Maxy-Rosenau , 2007, (15 <sup>th</sup> edition)Public Health and Preventive Medicine.(15 <sup>th</sup> Edition)
7.	C.N. Shankar Rao, 2006 (2nd revised edition) ,Sociology of Indian Society, S. Chand.

MPH-102		BASIC EPIDEMIOLOGY-I	
		Theory	80 marks
		Practical	50 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
It will introduce about the history, definition, concept, determinants, applications, basic measurements and infectious disease epidemiology.			
UNIT I	Historical aspects of epidemiology, Basic concepts, definition and significance, aims of epidemiology, Clinical versus epidemiological approach, The epidemiology triad, Issues and problems of epidemiology, Applications and uses of epidemiology Concept of diseases, concept of causation, natural history of disease, spectrum of disease, concept of control, frequency and distribution of disease, determinants of disease, disease classification (ICD 10/ICD 11)		
UNIT II	Basic measurements in epidemiology (rates, ratios and proportions), Measurements of mortality Measurements of morbidity (prevalence and incidence), Demography: Definition and Concept Demographic cycle. Global trends in demography, Indian trends in demography (age pyramids, sex ratio, dependency ratio, density, family size, life expectancy, birth and death rates, growth rates).		
UNIT III	Outline of various study designs. Methods of descriptive epidemiology, analytical epidemiology, experimental epidemiology. Environmental epidemiology, role of Environmental epidemiology in public health, epidemic curve, sampling design and data collection, sources of data, criteria for quality and utility of epidemiologic data, confidentiality, sharing of data and recall linkage, data interpretation issues, Bias, Confounding		
UNIT IV	Infectious disease epidemiology, Disease transmission. Disease prevention and control, Screening, Host defenses/immunizing agents, Vaccines under National Immunization Schedule, Newer Vaccines, Concept of screening, screening and diagnostic tests, concept of lead time, sensitivity and specificity, uses of screening		
Practical's	<ul style="list-style-type: none"><li>• Basic measurements in epidemiology (rates, ratios and proportions)</li><li>• Measurements of mortality and morbidity (prevalence and incidence).</li><li>• Applied aspects of study designs.</li><li>• Food poisoning estimation</li><li>• Planning of cross-sectional and case control study</li></ul>		

	<ul style="list-style-type: none"> <li>• Planning of cohort study</li> <li>• Birth and death rate</li> <li>• Sample size calculation</li> <li>• Collection of data through questionnaire</li> </ul>
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Essential Reading	
1.	R Bonita, R Beaglehole, T Kjellstrom, 2006 (2nd edition), Basic epidemiology, World Health Organization.
2.	John Yarnell, 2007 (1 <sup>st</sup> edition), Epidemiology and Prevention- A system Based Approach, Oxford.
3.	D.J.P. Baker, Geoffrey Rose, 2003 (4 <sup>th</sup> edition), Epidemiology for the Uninitiated, BMJ Publishing Group.
4.	Koepsell, T and Weiss, 2003 (1 <sup>st</sup> edition), Epidemiologic Methods, Studying the Occurrence of Illness. Oxford University Press.
5.	Kleinbaum DG, Sullivan K, Barker N.2007 (1 <sup>st</sup> edition), A Pocket Guide to Epidemiology. New York : Springer.
6.	Last JM, Spasoff RA, Harris SS, Thuriaux MC, 2001 (5 <sup>th</sup> edition), A Dictionary of Epidemiology. New York : Oxford University Press.
7.	Leon Gordis, "Epidemiology", 2009,(4 <sup>th</sup> edition), W. B. Saunders Company, Philadelphia.
8.	Aschengrau A, Seage GR, 2008 (2nd edition), Essentials of Epidemiology in Public Health. Sudbury , Mass: Jones and Bartlett Publishers,
9.	Friis RH, Sellers TA, 2004 (3 <sup>rd</sup> edition), Epidemiology for Public Health Practice. Sudbury, Mass: Jones and Bartlett Publishers.
Reference Books	
1.	K. Park, 2013 (22 <sup>nd</sup> edition), Textbook of Preventive and Social Medicine, BanarsidasBhanot.
2.	M.C. Gupta and B.K. Mahajan, 2005 (3rd edition), Textbook of Preventive and Social Medicine,Jaypee Brothers Medical Publishers (P) Ltd.
3.	J.S. Mathur, 2007 (1st edition), Textbook of Preventive and Social Medicine, CBS publisher.
4.	Roger Detels, James McEwen, Robert Beaglehole and Heizo Tanaka 2009 (5th edition), Oxford Textbook of Public Health, Helen Liepman.
5.	Wayne W. Daniel, 2007 (1 <sup>st</sup> edition), Epidemiology and Prevention- A System based Approach, Oxford.
6.	Sunderlal, Aadarsh, Pankaj, 2007 (2 <sup>nd</sup> edition), Textbook of Community Medicine, CBS Publishers & Distributors.
7.	Kirch, Wilhelm, 2008 (1 <sup>st</sup> edition),Encyclopedia of Public Health, Volume 1 & 2, Kluwer Academic Publishers.

MPH-103		MATERNAL AND CHILD HEALTH	
		Theory	80 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
It will introduce about the nutrition, health and diseases, Preventive and therapeutic concepts to reduce the morbidity and mortality among mothers and children and basic concepts of demography.			
UNIT I	Family Planning: Definition, Scope, and Concepts, Health aspects of family planning, small family norms, eligible couple, target couple, couple protection rate, Contraceptive methods (Spacing methods and Barrier methods), and Hormonal contraceptive, Unmet need for family planning, Delivery and organization of MCH/FP services		
UNIT II	Relation between nutrition, health and disease. Malnutrition, nutrition related deficiencies, diseases and disorders. Recommended dietary allowances, Epidemiology, classification of nutrition risk factors. Amelioration of nutrition risk factors through public health measures, Over nutrition.		
UNIT III	Public health problems facing pregnant women and babies. Linkage between health of women and babies. Preventive and therapeutic concepts of reduction of morbidity and mortality among mothers and children, Human growth (definition), factors affecting growth, age dependent and age independent Anthropometry, methods of studying child growth, growth monitoring/assessment. Road to Health chart (concept of utility), growth standards/norms		
UNIT IV	Factors specific to Indian situations leading to maternal and child health, Indicators of MCH care, Current strategies for improvement of maternal and child health. Integrated Management of Neonatal and Childhood Illnesses (IMNCI), Maternal and child nutrition, Breast feeding, nutrition requirement of pregnant and lactating mothers, Methods of promoting dietary change		

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Essential Reading	
1.	B. Srilakshmi, 2008 (5th edition), Dietetics, New Age International (P) Limited, Publishers.
2.	Kotch, Jonathan, MD, MPH, 2005 (2nd edition), Maternal & Child Health Programs, Problems and Policy in Public Health.
3.	Mary- Jane Schneider and Henrey Schneider, 2006 (2nd edition), Introduction to Public Health, Jones and Bartlett Publishers.
4.	Richard Skolnik, 2008(1st edition), Essentials of Global Health, Jones and Bartlett Publishers.
5.	K.Park, 2013 (22 <sup>nd</sup> edition), Textbook of Preventive and Social Medicine, BanarsidasBhanot.
6.	OP Ghai, Vinod K Paul, ArvindBagga,(7 <sup>th</sup> edition) Essential Pediatrics, CBS Publishers & Distributors
7.	M.C. Gupta and B.K. Mahajan , 2005 (3rd edition), Textbook of Preventive and Social Medicine, Jaypee Brothers Medical Publishers (P) Ltd.
Reference Books	
1.	J.S. Mathur, 2007 (1st edition), Textbook of Preventive and Social Medicine, CBS Publishers.
2.	Roger Detels, James McEwen, Robert Beaglehole and Heizo Tanaka 2009 (5th Edition), Oxford Textbook

	of Public Health, Helen Liepman
3.	Frances Sizer and Eleanor Whitney, 1977 (7th edition), Nutrition-Concepts and Controversies, West Wadsworth.

MPH-104		BASIC COMPUTING AND RESEARCH METHODOLOGY	
		Theory	80 marks
		Practical (Computer)	50 marks
		Internal Assessment	20 marks
		Hours	6-7/unit
It will introduce about the basics of computer system, software's used in public health, and data processing.			
UNIT I	Computer system and its components, control unit, ALU, input/output functions and characteristics, memory – RAM ROM and other types of memory. Storage fundamentals – primary vs secondary data storage and retrieval methods.		
UNIT II	Software's Application, software and its application and its types –Windows vista, window XP, window 7, Word, Excel:-Data entry, Statistical functions and Graphics capabilities. Power -point, characteristics, uses and examples and area of applications of each of them, virus working principles, types of viruses, virus detection and prevention. web page design, writing a report, front page, index, references, tables, graphs, hyper linking		
UNIT III	Basic elements of research – research problem: selection and formulation of objectives; Research Process: review of literature, on line search of literature, hypothesis, Types of research: Qualitative and quantitative. Study designs: Observational; cross sectional, longitudinal, case control, cohort. Retrospective & Prospective studies, Long/Cross cases), sampling and methods of data collection. Experimental: Randomized control trial, clinical trial designs including cross over trials, factorial trials. Qualitative research techniques: case study, interviews, focus group discussions, grounded theory, Application of software – SPSS, EPIINFO, STATA		
UNIT IV	Data processing: Editing, coding, classification and tabulation, Data analysis, thesis/dissertation writing, paper writing, Questionnaire Design, Interview technique, Proposal writing, Report writing, reference writing, Ethics in research, plagiarism, h-index, citation, use of antiplagisim software's, inform consent, ethical clearance, confidentiality of subject		
Practical Computers	<ul style="list-style-type: none"> <li>Using various editing and formatting features of Microsoft Word, Design one page notice to invite entries from students for a co-curricular activity being organized by your department.</li> <li>Using various editing and formatting features of Microsoft Word, Design a project report (comprising minimum 4 pages) containing first page for title, second page for table of contents, remaining pages should contain details. Also include picture, table, header/footer, margin, flow/process diagram etc.</li> <li>Using Microsoft Excel, prepare a worksheet for a class containing student names, marks in various subjects with appropriate labels. The total marks of each student and the class averages for each test must be calculated using functions/formulas.</li> </ul>		



	<p>Format your sheet suitably using various features.</p> <ul style="list-style-type: none"> <li>• Using Microsoft Excel, prepare a worksheet for financial budget of an organization containing details about various heads of expenditure, amount etc. Also include details of previous years. Draw appropriate charts for comparative analysis.</li> <li>• Using Microsoft PowerPoint, design a presentation to create awareness about hygiene among kids. Make use of interesting pictures and animations.</li> <li>• Using Microsoft PowerPoint, design a presentation for your academic seminar. Make use of hyperlinks, buttons, custom animations etc.</li> <li>• Use of anti plagiarism software</li> <li>• Reference writing</li> <li>• Data entry using Epi-Info</li> </ul>
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Essential Reading	
1.	Gurvinder Singh and Rachhpal Singh, 2007 (9th edition), A Text Book of Window based Computer Courses, Kalyani Publishers.
2.	Sinha P.K., 2003 (3 <sup>rd</sup> edition), Computer Fundamentals, Kalyani Publisher.
3.	J.N. Sharma, 2007 (1 <sup>st</sup> edition), Research Methodology, The Discipline and its Dimensions, Deep & Deep Publication, New Delhi.
4.	C R Kothari, 2008 (2 <sup>nd</sup> revised edition) Research Methodology: Methods And Techniques, Edition, New Age International Publishers.
Reference Books	
1.	Douglas G. Altman, 2001, (2 <sup>nd</sup> edition) Practical Statistics for Medical Research, Chapman & Hall/CRC.
2.	Kahlon, K.S., Singh, Gurvinder Singh, Rachhpal, 2007 (4 <sup>th</sup> edition) Computer Fundamentals and Programming,
3.	Douglas Goldstein, Peter J. Groen, Suniti Ponkshe, Mare Wine, 2007 (1 <sup>st</sup> edition), Medical Informatics 20/20, Jones and Bartlett Publishers.
4.	Singh Jagdeep, 2007 (2 <sup>nd</sup> edition), Computer Science and Application.

MPH-105		ENVIRONMENTAL HEALTH (OPEN ELECTIVE)	
		Theory	80 marks
		Practical	50 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
It will introduce about the basics concept of environmental health, Current and emerging issues in environmental health, Risk assessment, Risk Management.			
UNIT I	Basic concepts and definition of Environment, Different aspects of Environment (Physical, Biological and Social) Impact of Environmental factors on health, Nature of environmental hazards (Biological, Chemical, Physical, Mechanical and Psycho-social), Role of environmental health professionals, Meteorological environment, ventilation, Light, Noise, Radiation, Nature of adverse effects on health and interventions, Role of Government of India and state governments In protecting environment, Role of International Agencies-UNDP and World Bank.		
UNIT II	Air quality and health, Composition of atmosphere, atmosphere structure, Primary and secondary pollutants and their effects, criteria pollutants, air quality standards, Vehicular pollution, Indoor air pollution, Climate Change, Global warming, Green House Gases, Ozone layer depletion, acid rain etc., Current and emerging issues in environmental health		
UNIT III	Water quality and health, water pollutants, sources of pollutants, organic pollutants, inorganic pollutants, DO, BOD, COD, surveillance of drinking water quality, water quality standards, water quality index, water borne diseases, Hardness in water, Eutrophication, thermal pollution.		
UNIT IV	Basic requirements for a healthy environment, Housing and health, Swach bharat abhiyan, Sanitation and health, Solid waste problems in India, Solid waste management, Bio medical waste management Food contaminant food additives, Food quality criteria and assurance, Food borne diseases, food poisoning, Vector and rodent control, Risk assessment, Risk management, biochemical markers		
Practical	<ul style="list-style-type: none"> <li>pH and EC estimation</li> <li>field visit to Pollution control board/ meteorology department</li> <li>Fluorosis and fluorides estimation</li> <li>Water surveillance</li> <li>Vector borne disease surveillance like dengue etc.</li> <li>Community engagement in waste management</li> <li>Creating awareness among community about sanitation and health</li> <li>Water and air sampling</li> </ul>		
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Essential Reading	
1.	AnnaleYassi, TordKjellstorm, Theo de Kok and Tee L. Guidotti, 2001, Basic Environmental Health, Oxford University Press
2.	Williams, PL, James RC, and Roberts SM, 2000 (2 <sup>nd</sup> edition), Principles of Toxicology: Environmental and Industrial Applications,. John Wiley & Sons, Inc.

BRIDGE COURSE		
MPH- 106 (A)	BASIC CONCEPTS IN LIFE SCIENCES (FOR NON-SCIENCE STUDENTS)	
	Theory	50 marks (NC)
	Hours	3-4/unit
To develop basic understanding of science subjects in the non-science students.		
UNIT I	Levels of organization, cells, tissues, organs systems and organisms. Basis of ecology-principles of ecology, population ecology introduction to environment Principle classification of organisms, infections and diseases.	
UNIT II	Body systems and related diseases- Digestive, Respiratory, Circulatory, Excretory, Reproductive, Nervous, Endocrine and Immune systems	
UNIT III	Genetics: Introduction to molecular genetics, DNA, RNA and proteins, genetic disorders	
UNIT IV	Microbiology: Microorganisms- Bacteria and Viruses. Their involvement in food borne diseases, diseases of various body systems caused by microorganisms.	

MPH- 106 (B)	BASIC CONCEPTS IN SOCIAL SCIENCES (FOR SCIENCE STUDENTS)	
	Theory	50 marks (NC)
	Hours	3-4/unit
To develop basic understanding of the concepts of social science subjects to the science or medical students, thus helping them to gain knowledge about the importance of Social Science and apply their principles in Public Health.		
UNIT I	Basic concepts in Sociology- Meaning of sociology, scope of sociology, sociological perspectives, significance of sociology for students of Public Health. Basic concepts- Society, Culture, Group and Community.	
UNIT II	Basic concepts in Psychology- Introduction to Psychology: current psychological perspectives, psychology in the 21 <sup>st</sup> Century. Self and Personality: concept of self and personality, self esteem, trait theories of personality, Attitudes: attitude formation, attitude change, attitudes and behavior. Stress and Coping: nature and sources of stress, effects of stress, coping with stress.	
UNIT III	Basic concepts in Philosophy- A General introduction to the nature, problems and branches of philosophy. Ethical Theories: Platonism, Aristotle's, Golden Mean, Stoicism, Cynicism, Hedonism, Utilitarianism, Kant's categorical Imperative, Good will and Maxims of Morality. Applied aspect of Bio-ethical problems at a societal level.	
UNIT IV	Basic concepts in human behavior- Introducing the state of health in India and the use of medical anthropology. The importance of culture in studying health. Studying the health of communities: Theories to understand the relationship between health illness and culture: social interaction as a tool for understanding health. Public health as being a part of society and culture. Use of case studies to improve understanding of health and culture.	

## SEMESTER – II

MPH- 201		BIostatISTICS	
		Theory	80 marks
		Practical	50 marks
		Internal Assessment	20 marks
		Hours	7-8/unit
To introduce students to the use of biostatistics in health sciences for analysis, interpretation and presentation of data. To train students to use statistical software and handle large data sets.			
UNIT I	Biostatistics: its meaning and objectives, measurement scales, Population and Samples. Data presentation, Frequency tables, graphs, Diagrams. Measures of location, measures of dispersion, variability (box and whisker plot), skewness and kurtosis		
UNIT II	Intuitive concept of probability, conditional probability (Bayesian theorem), Specificity, Sensitivity and ROC Curve, cohort study, case control study, randomized control trials, relative risk, odds ratio. Scatter diagram, correlation and Spearman’s rank Correlation Coefficient, Regression and multiple regressions, logistic regression, Random variables, probability mass function, probability density function, expectation and variance, normal distributions. (Practical using SPSS only)		
UNIT III	Vital statistics (standardized rates, morbidity, mortality, fertility rates) Sampling Techniques, Sample size, Distributions of sample mean, difference of means, sample proportion and difference of proportions, the basic idea of testing hypothesis , Tests of hypothesis for the parameters of a normal distribution (two sample problems also) including normal testing for population proportions, paired t-test, chi-square tests (Practical using SPSS only)		
UNIT IV	Analysis of variance (ANOVA). Non-parametric: Sign-test, Wilcoxon Signed rank test, Mann-Whitney U-test. Kappa Coefficient of Agreement, Survival Analysis (Kaplan Meir Estimates, Life Table Method) (Practical using SPSS only)		
Practical	<ul style="list-style-type: none"><li>• Frequency Tables, Graphs, Measure of location, dispersion, skewness and Kurtosis.</li><li>• ROC curves, relative risk, odds ratio</li><li>• Scatter Diagram, correlation, Spearman’s rank correlation</li><li>• Regression, Multiple Regression, Logistic Regression</li><li>• Test of hypothesis, Parametric and Non-parametric</li><li>• Survival Analysis</li><li>• ANOVA (one way and two way classification)</li></ul> (Using SPSS only)		

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Essential Reading	
1.	Wayne W. Daniel, 2008 (1 <sup>st</sup> edition): Biostatistics: A foundation for analysis in the health sciences, Wiley Publication.
2.	AbhayaIndrayan, 2008 (2 <sup>nd</sup> edition), Medical Biostatistics Chapman & Hall/CRC, Boca Raton.
3.	Robert R Pagano, Marcello Pagano, KimberleeGauvreau, 2009, (2nd edition) <b>Principles of</b>

	<b>Biostatistics</b> , Duxbury Press.
4.	Sylvia Wassertheil-Smoller, 2004 (3 <sup>rd</sup> edition), Biostatistics and Epidemiology: A Primer for Health and Biomedical Professionals.
5.	Beth Dawson-Saunders and Robert G. Trapp. ,( 4th edition), Basic and Clinical Biostatistics
6.	Pagano M and Gauvreau K, 2000 (2nd edition), Principles of Biostatistics.. Pacific Grove, Brooks/Cole.
7.	Hebel JR, McCarter RJ, 2006 (6 <sup>th</sup> edition), Study Guide to Epidemiology and Biostatistics. Jones & Bartlett.
8.	Rosner B. 2006 (6 <sup>th</sup> edition), Fundamentals of Biostatistics, Belmont: Thomson.
<b>Reference Books</b>	
1.	Goon A.M., Gupta M.K.,Dasgupta B, 2002 (8 <sup>th</sup> edition),Fundamentals of Statistics Vol. I/II,World Press, Calcutta.
2.	Alan Agresti, 2002 (2nd edition), Categorical Data Analysis, John Wiley & Sons.
3.	GoletiBalaKrishanmurty, Patricia Kasoviaschmitt, David J. Ostrott, 1995(1 <sup>st</sup> edition), Statistics, Jones Bartlett
4.	Martin Bland, 2000 (3 <sup>rd</sup> edition), An Introduction to Medical Statistics, New York, NY: Oxford University Press.
5.	R. Peck, C. Olsen, and J. Devore, 2008 (3 <sup>rd</sup> edition), Introduction to Statistics & Data Analysis. Thomson Learning: Belmont, CA
6.	R. Peck and J. Devore , 2007 ( 6 <sup>th</sup> edition)Statistics: The Exploration and Analysis of Data, Brooks/Cole – Thomson Learning: Belmont, CA

MPH-202		OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT	
		Theory	80 marks
		Practical	50 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
It will introduce about the concepts of occupational health, hazards and safety management and various diseases related to the discipline.			
UNIT I	Occupational health: definition, occupational health risks, occupational hazards (physical, chemical, biological, mechanical, psychological), common occupational diseases: diseases due to metal, air pollution, water pollution, work related diseases (pneumoconiosis, Anthracosis, Byssinosis, Bagassosis, Asbestosis, Farmer's lung and lead poisoning), occupational cancer (skin cancer, lung cancer, bladder cancer, leukemia), hazardous agents in the workplace, prevention of health risks,		
UNIT II	Injuries: definition, types of injuries, intentional (homicide, assault, suicide etc.) and unintentional (motor vehicle crashes, falls, poisonings, fires, etc.) injuries, preventions and control of unintentional and intentional injuries in the workplace, violence in our society and resources for prevention, cost of injuries to society, ergonomics, First aid		
UNIT III	Need for safety, health and environment (S,H,&E), fundamental of safety, safety policy: guiding principles, targets and goals, safety objectives, SHE planning, safety manual, principal of safety management, safety organisation, responsibility of safety personnel, safety training and awareness, Communication, posters and signage, safety inspection, occupational safety and health acts, Emergency preparedness and response, safety inspection, SHE audits, industrial safety, industrial hygiene		
UNIT IV	Extent of industrial pollution, major chemical contaminates of concern in the general environment and the workplace, Sickness absenteeism, improving occupational health Accidents : types, causes, classification, Preventive measures, accident investigation, accidents reports and record keeping, safety at workplace, industrial accidents (Bhopal gas tragedy and London fog smog), measures of health protection of workers in India, (medical, legislation, engineering and administration, personal protective equipments, safety in hazardous area, fire prevention and fire fighting hazard identification		
Practical	<ul style="list-style-type: none"> <li>• First Aid</li> <li>• Safety at workplace</li> <li>• Assessment of exposure to chemical</li> <li>• Study on hazardous chemical in Community Environment</li> <li>• Organize / participate in various teaching / training programmes for various population groups such as PG students/academicians/industrials medical officer.</li> </ul>		

NOTE:	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.
<b>Essential Reading</b>	
1.	World Health Organization Manuals, 2001(1 <sup>st</sup> edition), Occupational health - A manual for primary health care workers.
2.	AnnaleYassi, TordKjellstorm, Theo de Kok and Tee L. Guidotti, 2001(1 <sup>st</sup> edition), Basic Environmental

	Health, Oxford.
3.	LaDou 2007,(4th edition) Current Occupational and Environmental Medicine, McGraw Hill Co.

Reference Books	
1.	Grad, FP. 2005 (3 <sup>rd</sup> edition), Public Health Law Manual. American Public Health Association.
2.	Susan B. O'Sullivan, Thomas J. Schmitz, 2006 (4 <sup>th</sup> edition), Physical Rehabilitation.
3.	James F. McKenzie, Robert R. Pinger, Jerome E. Kotecki, 2005 (5 <sup>th</sup> edition), An Introduction to community Health, Jones and Bartlett Publishers.
4.	K. Park, 2013 (22 <sup>nd</sup> Edition), Textbook of Preventive and Social Medicine, BanarsidasBhanot.

MPH-203		SURVEY METHODS	
		Theory	80 marks
		Practical	50 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
It will introduce about the basics concept of survey designing, methodology, its testing and report writing.			
UNIT I	Questionnaire and Form design: Definition and objective of a questionnaire, questionnaire design process, types of interviewing methods, question structure, wording, order of questions, Form and layout.		
UNIT II	Sampling: Design and Procedures, objectives; sample or census, target population, sampling frame, sampling technique, sample size, sampling process, Non-probability sampling-convenience, judgment, quota, snowball sampling Probability sampling: simple random sampling (with and without replacement), Systematic sampling, stratified sampling, cluster sampling and probability proportional to size sampling.		
UNIT III	Research design: Exploratory research design; secondary data, qualitative research, Descriptive research design; Causal research design, measurement and scaling; fundamental and comparative scaling and non-comparative scaling technique.		
UNIT IV	Communicating the results, writing the report, Technical writing, oral presentation, planning and structuring a presentation, presenting the result, Public speaking and presentation, unplanned and planned presentation, informative and persuasive presentation, small group and large group presentation, Practical exercise and demonstration.		

<b>Practical</b>	<ul style="list-style-type: none"> <li>To design a questionnaire for specific type of Survey</li> <li>To calculate sample size to get a representative sample</li> <li>To understand different sampling methods in a particular survey</li> <li>To understand qualitative and quantitative research design</li> <li>Uses of different scales in survey (e.g. Likert scales)</li> <li>Referencing in report writing (e.g. APA style, MLA Style, Harvard Style, Chicago Style, Vancouver Style)</li> </ul>
<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.

<b>Essential Reading</b>	
1.	Arlene Fink, 2009 (4 <sup>th</sup> edition), How to conduct surveys: A step by step guide, Sage publication.
2.	Robert M. Groves, Floyd J. Fowler Jr., Mick P. Couper, James M. Lepkowski, Eleanor Singer, Roger Tourangeau, 2009 (2 <sup>nd</sup> edition) Survey Methodology (Wiley Series in Survey Methodology).
3.	C R Kothari, 2008 ( 2 <sup>nd</sup> revised edition), Research Methodology : Methods And Techniques, 2nd Revised Edition, New Age Int. Pub.
4.	Babbie, Earl R., 1973 (2 <sup>nd</sup> edition), Survey Research Methods. Belmont, CA: Wadsworth Pub. Co.
5.	Lu Ann Aday, Llewellyn Joseph , 2006 (3 <sup>rd</sup> edition), Designing and conducting health surveys: a comprehensive guide .
<b>Reference Books</b>	
1.	Edward L. Korn, Barry I. Graubard ,1999 (1 <sup>st</sup> edition), Analysis of Health Surveys.
2.	Koepsell, T and Weiss, N., 2003 (1 <sup>st</sup> edition), Epidemiologic Methods, Studying the Occurrence of Illness. Oxford University Press.
3.	K. Park, 2013 (22 <sup>nd</sup> Edition), Textbook of Preventive and Social Medicine, Banarsidas Bhanot.
4.	Asha Kaul, 2009 (1st edition), The effective presentation, Sage publication.
5.	Michael Jay Polonsky , David S. Waller, 2010 (2 <sup>nd</sup> editon), Designing and managing a research project, saga publication
6.	Nicholas Walliman, 2005 (2 <sup>nd</sup> Edition), Your Research Project, Vistaar Publication
7.	World Health Organisation, 1997 (4 <sup>th</sup> Edition) Oral Health Surveys - Basic Methods, WHO Geneva

<b>MPH-204</b>	<b>PUBLIC HEALTH IN EMERGENCIES, DISASTERS AND CONFLICTS</b>	
	<b>Theory</b>	<b>80 marks</b>
	<b>Internal Assessment</b>	<b>20 marks</b>
	<b>Hours</b>	<b>5-6/unit</b>



It will introduce about the fundamentals of emergencies, disaster and outbreak management.	
<b>UNIT I</b>	Definition, Concept, Objectives, Elements and Significance of Disaster Management. Dimensions and typology of Disasters: Natural Disasters- include broad outlines regarding natural disasters such as; earthquakes, volcanic eruptions, floods, landslides, avalanches, tsunamis, cyclones, climatic change, droughts and epidemics. Manmade Disasters- include wars, industrial accidents, soil degradation, desertification, deforestation, radiation hazards, depletion of water resources, destruction of ecological, system, landslides, fire, oil spill, breakdown of essential services etc.
<b>UNIT II</b>	Aspects of Disaster Management, Response, Preparedness, Mitigation, Relief Phase, Role of union & state Governments., Non Governmental Organizations, International Agencies and friendly countries, Epidemiological Surveillance and disease control, Vaccination, Nutrition, Rehabilitation. Post Traumatic stress Disorder, Personal Protection in different emergencies.
<b>UNIT III</b>	Disaster management in health sectors, Disaster preparedness, Policy development, Disasters in India, Conflicts, Radiation Hazards, Stress and Strains, Urban slum, Climate variations and public health. NDM Policy Disaster Management in India. Disasters Management Act 2005. Epidemic: Definition, Types of Epidemics, Major Epidemics, Control, Preventions. Outbreak investigation
<b>UNIT IV</b>	Epidemics: Safe and Hygienic food, Maintenance of infection free environment, maintaining mental health during and after disasters. Rehabilitation after the outbreak.
<b>Field Visit</b>	<ul style="list-style-type: none"> <li>• SDMA</li> <li>• Meteorological Deptt.</li> </ul>
<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.

Essential Reading	
1.	Goel, S. L., 2006 (1 <sup>st</sup> edition), Encyclopaedia of Disaster Management, Deep & Deep Publications Pvt Ltd
2.	G.K. Ghosh, 2012 (1 <sup>st</sup> edition), Disaster Management, A.P.H. Publishing Corporation
3.	R.B. Singh, 2000 (1 <sup>st</sup> editin), Disaster Management, Rawat Publications
4.	Ayaz Ahmad, 2003 (1 <sup>st</sup> edition) Disaster Management: Through the New Millennium, Anmol Publications
5.	P.K. Dave, 2001 (1 <sup>st</sup> edition), Emergency Medical Services and Disaster Management: A Holistic Approach, Jaypee Brothers Medical Publishers (P) Ltd
6.	B Narayan, 2009, (1 <sup>st</sup> edion), Disaster Management, A.P.H. Publishing Corporation
7.	Arvind Kumar, 2006 ( 1 <sup>st</sup> edition), Disaster Management - Recent Approaches, Anmol Publications
8.	B C Bose, 2006 (1 <sup>st</sup> edition), Modern Encyclopaedia of Disaster and Hazard Management, Rajat Publications
9.	Nikuj Kumar, 2006 (1 <sup>st</sup> edition), Disaster Management, Alfa Publications

Reference Books	
1.	World Health Organization, regional Office for the Western Pacific, 1998, District Health Facilities:

	guidelines for development & operations, WHO, regional publications, Western Pacific Series No. 22.
2.	Michael I. Greenberg, 2006, (1 <sup>st</sup> edition), Encyclopedia of Terrorist, Natural and Man Made Disasters, Jones & Bartlett Pub
3.	World Health Organization, 2000, The Management of Nutrition in Major Emergencies, WHO, Geneva.
4.	Textbook on Disaster Management, Together Towards A Safer India III, 2008. NCERT Publication,

<b>MPH-205 (A): GENETICS AND PUBLIC HEALTH (OPEN ELECTIVE)</b>	
	<b>Theory</b>
	<b>80 marks</b>
	<b>Internal Assessment</b>
	<b>20 marks</b>
	<b>Hours</b>
	<b>5-6/unit</b>
<b>It will introduce about the basics of genetics, community genetics, genetic abnormalities and their assessment.</b>	
<b>UNIT I</b>	General Principles of Heredity, Structures and Functions of DNA, Genes, Chromosomes, Inherited diseases caused by Chromosomal abnormalities (Brief description, cause of disease, symptoms/signs, frequency), Congenital defects, Inherited diseases caused by mutation, Chemicals that cause birth defects/mutagenic agents.
<b>UNIT II</b>	Complex multifactorial anomalies and diseases (common chronic diseases, diabetes, mental disease, major psychosis, alcoholism, cancers), Genetic variability (in relation to drugs, food other environmental factors, ecogenetics), Research methods for evaluating genetic influences on diseases (Twin studies, family studies, population based associated studies).
<b>UNIT III</b>	Community genetics (genetic screening, heterozygote screening), Assessment of genetic risks Preventing hereditary diseases- (Prenatal testing (non-invasive tests, invasive tests), Genetic testing, Genetic counseling) Procedure of amniocentesis, Treating hereditary disease (Gene therapy, Stem cells, Somatic cell nucleus transfer technique), Controversies in genetic therapies.
<b>UNIT IV</b>	Cloning (definition, technical procedure, controversies), Human genome project (Brief history, results, implications, impact on public health Indian scenario), Eugenics (definition, implications for public health, controversies), Euthenics (definition, implications for public health), Genetic discrimination
<b>NOTE:</b>	<b>Examiner will set a total of nine questions comprising two questions from each Unit, and one compulsory question of short answer type, covering the whole syllabus. It will consist of eight short answer questions of 2 marks each. Students will attempt one question from each unit and the compulsory question. All questions may carry equal marks.</b>

<b>Essential Reading</b>	
1.	Muin J. Khoury, Wylie Burke, and Elizabeth J. Thomson, 2001 (1 <sup>st</sup> edition), Genetics and Public Health in the 20th Century, New York: Oxford University Press.
2.	Claudia N. Mikail, 2008 (1 <sup>st</sup> edition), Public Health Genomics: The Essentials, Wiley Publishing.
3.	Cornel, M. C, 2007(1 <sup>st</sup> edition), A New Community Genetics and Public Health Genomics Textbook, , Vol. 10.4, Karger AG Publications
<b>Reference Books</b>	
1.	Roger Detels, James McEwen, Robert Beaglehole and Heizo Tanaka 2009 (5 <sup>th</sup> edition), Oxford Textbook of Public Health, Helen Liepman
2.	D.J. Taylor, N.P.O. Green, G.W. Stout, 2006 (3 <sup>rd</sup> edition), Biological Science, Cambridge University Press.

MPH-205 (B): GLOBAL HEALTH (OPEN ELECTIVE)	
	Theory 80 marks
	Internal Assessment 20 marks
	Hours 5-6/unit
It will introduce about the health of populations in a global context and trends of various communicable and non communicable diseases.	
UNIT I	<b>Concept of Globalization- Global health and public health</b> , critical global health concepts, global health priorities, SDGs, smallpox eradication, the determinants of global health, key global health indicators, the global burden of disease, causes of global deaths by: region, age and gender, the burden of global diseases & deaths within countries, demographic & epidemiological transitions
UNIT II	Global health education, global poverty, global economy, global health and equity, global health expenditure and health outcomes, public and private expenditure on global health, the cost-effectiveness of global health interventions, global health and development, the Copenhagen consensus, challenge of guinea worm in Asia and Sub-Saharan Africa, ethical and human rights concerns in global health.
UNIT III	Introduction to global health systems: the public, private and NGO sectors, health systems in high-income, middle-income and low-income countries, culture and global health, global health behaviors and behavior change, environment and global health, nutrition and global health, global scenario of maternal , child health and emerging infectious diseases, global health payers and players.
UNIT IV	Working together to improve global health, natural disasters and complex humanitarian emergencies, the characteristics and health burden of natural disasters, the characteristics and health effects of complex humanitarian emergencies, addressing the health effects of natural disasters and complex humanitarian emergencies, future challenges in meeting the health needs of disasters, role of United Nations in global health, Public-private partnerships and global health; science, technology and global health.

<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.
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Essential Reading	
1.	Kathryn H. Jacobsen, 2007(1 <sup>st</sup> edition), Introduction to Global Health, Jones and Bartlett Publishers.
2.	Richard Skolnik, MPA, George, 2011( 2 <sup>nd</sup> edition), Essentials of Global Health, Washington University, Washington D.C.
3.	A Lindstrand, S Bergstrom, H Rosling, 2006 (1 <sup>st</sup> edition),Global Health: An Introductory Textbook.
4.	C. Everett Koop MD, Clarence E. Pearson, 2000 (1 <sup>st</sup> edition),Critical Issues in Global Health, Jossey-Bass.
5.	Michael H. Merson, Robert E. Black, Anne J Mills, 2005 (2 <sup>nd</sup> edition), International Public Health: Diseases, Programs, Systems and Policies, Jones & Bartlett Learning.
6.	Ruth Levine, 2007 (1 <sup>st</sup> edition), Case Studies in Global Health: Millions Saved, Jones & Bartlett Publishers.
7.	Dean T. Jamison, Joel G. Breman, Anthony R. Measham et al, 2006 (2 <sup>nd</sup> edition),Disease Control Priorities in Developing Countries .
8.	Anne-Emanuelle Birn, Yogan Pillay and Timothy H. Holtz, 2009 (3 <sup>rd</sup> edition),Textbook of International

	Health: Global Health in a Dynamic World.
<b>Reference Books</b>	
1.	Turnock, BJ, 2009(4 <sup>th</sup> edition), Public Health: What It Is and How It Works. Boston: Jones & Bartlett.
2.	LaVeist, T, 2002(1 <sup>st</sup> edition), Race, Ethnicity & Health: A Public Health Reader. Jossey-Bass.

<b>SEMESTER – III</b>		
<b>MPH- 301</b>	<b>BASIC EPIDEMIOLOGY-II</b>	
	<b>Theory</b>	<b>80 marks</b>
	<b>Practical</b>	<b>50 marks</b>
	<b>Internal Assessment</b>	<b>20 marks</b>
	<b>Hours</b>	<b>5-6/unit</b>
<b>To acquaint students with the concept of using basic knowledge of communicable and non-communicable diseases, so that student is encouraged to think epidemiologically and manage comprehensively.</b>		
<b>UNIT I</b>	Epidemiology of communicable diseases: Smallpox, chickenpox, Measles, Rubella, Mumps, Influenza, Diphtheria, Whooping cough, Meningococcal meningitis, Acute respiratory infections, SARS, Tuberculosis, Poliomyelitis, Viral hepatitis, Acute diarrheal, diseases, Cholera, Typhoid fever, Food poisoning, Amoebiasis, Ascariasis, Hookworm infection, Dengue, Malaria.	
<b>UNIT II</b>	Epidemiology of communicable diseases: Rabies, Yellow fever, Japanese encephalitis, KFD, Chikungunya fever, Leptospirosis, Plague, Human salmonellosis, Rickettsial zoonoses, Scrub typhus, Murine typhus, Q Fever, Taeniasis, Leishmaniasis, Trachoma, Tetanus, Leprosy, STD, Yaws, AIDS. various steps for investigation of outbreaks.	
<b>UNIT III</b>	Epidemiology of Non-communicable diseases: CVD, Coronary heart disease, Hypertension, Stroke, Rheumatic heart disease, Cancer, Diabetes, Obesity, Blindness, Accidents and Injuries.	
<b>UNIT IV</b>	Clinical epidemiology, normality, abnormality, need based approach for diagnostic tests natural history and prognosis of a disease, Evidence based practice, prevention in clinical practice, Genetic epidemiology- Basic Genetics, Monogenic disorders, multi factorial disorders, methods in genetic epidemiology, human genome, Oral Health-dental caries, periodontal disease, Oral cancer	
<b>Practical</b>	<ul style="list-style-type: none"> <li>Investigation of an outbreak of diarrhoea/cholera/food poisoning (Any one)</li> <li>Investigation of an outbreak of dengue/malaria/chikungunya fever (Any one)</li> <li>Screening of Non-communicable disease</li> <li>Immunization Coverage survey</li> </ul>	
<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.	

Essential Reading	
1.	Kenrad E. Nelson Carolyn Masters Willians, 2006 (2nd edition), Infectious Disease Epidemiology-Theory and Practice, Jones and Bartlett Publishers.
2.	Robert H., Ph.D. Friis and Thomas A., Ph.D. Sellers, 2003 (3rd edition) Epidemiology for Public Health Practice, Aspen Publishers.
3.	D.J.P. Baker, Geoflery Rose, 2003 (1 <sup>st</sup> edition), Epidemiology for the Uninitiated, BMJ Publishing Group.
Reference Books	
1.	John Yarnell, 2007 (1 <sup>st</sup> edition), Epidemiology and Prevention- A system Based Approach, Oxford University Press.
2.	Heymann, David, 2008 (19 <sup>th</sup> edition), Control of Communicable Diseases Manual. American Public Health Association.
3.	Dicker, Richard, MD, MSc.2012 (3 <sup>rd</sup> edition), Principles of Epidemiology in Public Health Practice. U.S. Department of Health and Human Services - CDC.
4.	Koepsell, T and Weiss, 2003 (1 <sup>st</sup> edition), N. Epidemiologic Methods, Studying the Occurrence of Illness. Oxford University Press.
5.	Davidson's 2006 (20 <sup>th</sup> edition), Principles & Practice of Medicine, Churchill Livingstone Publisher.

MPH-302	HEALTH ECONOMICS AND SERVICES PLANNING	
	Theory	80 marks
	Internal Assessment	20 marks
To acquaint the students with the health service planning and management techniques. To introduce about the health economics principles.		
UNIT I	Concept and Meaning of Planning, Health Planning, Health Needs and Demands, Resources, Objectives, Targets and Goals, Plan, Pre-Planning, Planning Cycle and its Steps. Concept of Management, Management Methods and Techniques. Methods based on Behavioural Sciences, Quantitative Methods, Personal, Financial and Material Management.	
UNIT II	Health Planning in India, Various Committees (from Bhore Committee to Health for All 2000), Planning Commission, Health Sector Plans, Investments and Achievements during the Five Year Plans, 11 <sup>th</sup> Five Year Plan. Health Systems in India at the Centre, the State and the District Level.	
UNIT III	The Relevance of Health Economics, Key Economic Concepts (Elasticity, Marginal Analysis, Opportunity Cost, Efficiency, Equity). Supply and Demand – The Law of demand, Price Elasticity of Demand, The Law of Supply, Equilibrium, Consumer Theory, Production and Market Supply in different market conditions. Economic Efficiency and Basic Principle of Cost Benefit Analysis, Cost Effectiveness Analysis, Cost Utility Analysis – QALY & DALY.	
UNIT IV	Demand-Side Considerations, Demand for Health, The Production of Health, The Demand for Medical Care, Measuring Demand. The Market for Health Insurance, Health Insurance and Market Failure. Supply-Side Considerations, The Market for Health Care Professionals - The Theory of Labour Markets, Input Pricing, Demand for Inputs, Human Capital Investment. Financing of Health Services in India, National Health Accounts.	

<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.
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Essential Reading	
1.	Thomas, Richard K, 2010(2 <sup>nd</sup> edition), Health Services Planning, New York, Kluwer Academic Publishers..
2.	Folland Sherman, Goodman Allen, 2008 (5 <sup>th</sup> edition), The Economics of Health and Health Care New Delhi, Pearson (Indian Edition).
3.	Henderson James W. 2005(3 <sup>rd</sup> edition), Health Economics and Policy, New Delhi, South-Western a part of The Thomson Corporation (Indian Edition)
4.	Feldstein Paul J. (2009), Economics of Health Care, DelmerCengage (Indian Edition)
5.	Dewar Diane M. 2010 (1 <sup>st</sup> edition), Essentials of Health Economics, Sudbury, Jones and Barlett Publishers.
6.	Novick L.F., Morrow C.B., Mays G.P., 2008(2 <sup>nd</sup> edition), Public Health Administration, Principles for Population Based Management, Sudbury, Jones and Barlett Publishers.
7.	Whittington Ruth, 2008(1 <sup>st</sup> edition), Introduction to Health Economics: A Beginners Guide, UK, Greenflint.
Reference Books	
1.	Fallon L.F., Zgodzinski E. J., 2012(3 <sup>rd</sup> edition), Essentials of Public Health Management, Sudbury, Jones and Barlett Publishers.
2.	Drummond, M.F., Sculpher, M.J., Torrance, G.W. 2005(1 <sup>st</sup> edition), Methods for the economic evaluation of health care programmes, New York, Oxford University Press
3.	Devi V.Renuka, JhanM.Gowhar, 2011(1 <sup>st</sup> edition), Health Economics : Issues and Challenges, New Delhi, Deep and Deep Publications.
4.	Issel, L.M., 2009 (2 <sup>nd</sup> edition), Health Program Planning and Evaluation: A practical systematic approach for community health, Sudbury, Jones and Barlett Publishers
5.	Gupta, J.P., Sood, A.K., 2005(4 <sup>th</sup> edition), Contemporary public health: policy, planning, management, New Delhi, Apothecaries Foundation.

MPH-303		HEALTH INFORMATICS	
		Theory	80 marks
		Practical	50 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
<b>To learn about biomedical informatics, health records and Electronic health records. To know the applications of computational science in field of Imaging Informatics and Telemedicine.</b>			
<b>UNIT I</b>	Health Informatics: Definition, evolution, classification, applications, challenges, bioinformatics, medical informatics, public health informatics, health informatics education in India and world, future scope of health informatics. Databases and their types: Flat files, relational databases and object-oriented databases. Informatics Retrieval: Definition, concept, performance measures, applications, data mining, information resources. Scholarly Communication: digital library, open access		
<b>UNIT II</b>	Health records management: Health records, definition, classification, features, clinical data, its application, challenges, solutions, clinical data management system, clinical research informatics, nursing informatics. Electronic Health Records (EHR): Definition, features, potential benefits and cost benefit analysis of EHR, EHR adoption, steps in its implementation, Electronic medical records (EMR), personal health records (PHR), EHR/EMR software, application and resources. Health Care quality: definition and explanation, medical errors and patient safety, computerized provider/physician order entry (CPOE), functions and application, privacy and confidentiality of patient data/records		
<b>UNIT III</b>	Standards and Regulations: Concepts, various standards and regulations in health/medical informatics, standards and interoperability, identifiers and transaction standards, maintaining confidentiality of health information exchange. Brief overview of provisions of Information Technology Act w.r.t. privacy and confidentiality of information. Evidence based medicine (EBM): Definition, concepts, advantages, applications, EBM process, quality of evidence, evidence based practice (EBP), EBP w.r.t Public health, <del>medical decision making</del> , clinical decision support system (CDS), limitation of evidence based medicine		
<b>UNIT IV</b>	Health management information system: Definition, scope, classification, application, challenges and solutions, various models of health care management. Consumer health informatics: Overview, consumer information access and decision making, consumer – provider communication. Imaging informatics: Concepts, types, imaging in health care, modalities of imaging, digital imaging. Telemedicine: Concepts, application, telemedicine infrastructure, efficacy and barriers of telemedicine		
<b>Practical</b>	<ul style="list-style-type: none"> <li>• Retrieval of health information/ biological information from online resources</li> <li>• Creation of EHR database</li> <li>• Study of databases containing imaging information and their importance</li> <li>• Practical aspects of Electronic Health Records and Computerized Provider Order Entry (CPOE)</li> <li>• Application of Telemedicine in transfer of health records</li> <li>• Using open access resources and evidence based practice</li> </ul>		
<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.		



Essential Reading	
1.	Jules J. Berman, 2006(1 <sup>st</sup> edition), Biomedical Informatics, Jones and Bartlett publishers.
2.	Ramsden, 2009 (2 <sup>nd</sup> edition), Bioinformatics - An Introduction, Computational Biology, Vol. 10, , Jeremy.
3.	Patrick W. O'Carroll, William A. Yasnoff, 2002 (1 <sup>st</sup> edition), PublicHealth Informatics and Information Systems, Springer.
4.	John Mantas, A. Hasman , 2002 (1 <sup>st</sup> edition)Textbook in health informatics: a nursing perspective, IOS Press
Reference Books	
1.	Zoe Lacroix and Terence Critchew, 2003 (1 <sup>st</sup> edition), Managing Scientific Data, Elsevier
2.	Ed. Salvia Nagl, John Wiley, 2006 (1 <sup>st</sup> edition), Cancer Bioinformatics: from Design to Treatment, Wiley publication.
3.	Sharon B. Buchbinder, Nancy H. Shanker, 2007 (1 <sup>st</sup> edition), Introduction to Health care Management, Jones & Bartlett publishers.

MPH-304 (A)	HEALTH FOR SPECIAL GROUPS (ELECTIVE)	
	Theory	80 marks
	Internal Assessment	20 marks
	Hours	5-6/unit
The course will help in acquiring knowledge about health needs of adolescents as well as for graceful ageing and problems of elderly, Health for Special Groups & population.		

<b>UNIT I</b>	Adolescent health: Definition/concept and scope, Adolescent growth and maturations, factors affecting growth and maturation, Addressing Adolescent Public Health issues and magnitude of problem, Reproductive health, Nutrition and fitness Factors affecting adolescent health, Public health programmes (national) for the adolescents in Indian context. (ICDS, Kishori Shakti Yojna, ARSH,), Suicides, Delinquency, Addiction, Peer Pressure.
<b>UNIT II</b>	Gerontology: Definition/concept and significance, health problems in the elderly (due to ageing process, associated with long term illness, psychological process) factors affecting health in the elderly- Addressing elderly public health issues, magnitude of problems, lifestyle, alternative medicine, treatment of old age health problem. Health status of the aged in India, Role of government and NGO's. National Policy on Older Persons.
<b>UNIT III</b>	Mental health: Definition and classification, Epidemiology of mental illnesses, Causes of mental ill health, Factors affecting mental health, Preventive/rehabilitative aspects, Prevention and control of mental illness, National Mental Health Programme
<b>UNIT IV</b>	Disability-Epidemiology of disability, Impairment, Disability, Handicap, Inter-disciplinary Rehabilitation Process, nature of rehabilitation, Benefits of rehabilitation. Concept of women's health, women rights, Problems of working women, IUCD

<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.
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<b>Essential Reading</b>	
1.	Gordon Edlin, Eric Golanty, 2006 (9th edition) Health & Wellness, Jones & Bartlett Publishers.
2.	Julia Brooking, Susan Ritter, Ben Thomas(1 <sup>st</sup> edition), A Textbook of Psychiatric and Mental Health Nursing,. Churchill Livingstone
3.	Sebastian Kraemer, 2007 (1 <sup>st</sup> edition), Textbook of Men's Mental Health, Edited by Jon E. Grant & Marc N. Potenza. American Psychiatric Publishing.
4.	Nancy Hooyman, H. AsumanKiyak, Allyn& Bacon 2007 (8 <sup>th</sup> edition),Social Gerontology: A Multidisciplinary Perspective.
5.	J. Grimley Evans, T. Franklin Williams, B. Lynn Beattie, J-P. Michel, G. K. Wilcock, 2000(2 <sup>nd</sup> edition), Oxford Textbook of Geriatric Medicine, Oxford University Press.
6.	Tom Shakespeare, August 2013 (2 <sup>nd</sup> edition) , Disability Rights and Wrongs, , Routledge Pub
7.	James Lake, 2006 (1 <sup>st</sup> edition),Textbook of Integrative Mental Health Care, Thieme Med. Pub
8.	Susan B. O'Sullivan, Thomas J. Schmitz, 2006 (4 <sup>th</sup> edition), Physical Rehabilitation.
<b>Reference Books</b>	

1.	K.J.S. Chatrath, 2006 (1 <sup>st</sup> edition), Joy of Mental Health, Mental Health Forum, Servants of the People Society, Sec. 15-B, Chandigarh.
2.	John Bond, Sheila Peace, Freya DittmannKohli, Gerben J. Westerh of, 2008, (3rd edition), Ageing in Society, Sage Publications.
3.	Jamison& Victor, 2002(1 <sup>st</sup> edition), Researching Ageing & Later Life, Open University, Press.

MPH-304 (B): PUBLIC HEALTH IN INDIA AND WORLD (ELECTIVE)	
	Theory 80 marks
	Internal Assessment 20 marks
	Hours 5-6/unit
It will introduce about the public health in India and health care delivery system. To be aware about current health policies and programmes like National Rural Health Mission (NRHM) and Integrated Disease surveillance Program (IDSP).	
UNIT I	History of Public Health in India, Concepts of Ayurveda, Yoga, Unani, Sidha and Homeopathy (AYUSH). (Bhore committee, Mudaliar committee, Chadah committee, Mukerji Committee, Jungalwalla committee, Kartar Singh Committee, Shrivastav Committee, Rural Health Scheme and Health for all by 2000 AD) Concept of Health Care, Level of Health Care, Elements of Health care. Health Status. Health Administration System in India, Centre, State and local level. Role of Community Health workers. Health Planning in India, Planning Commission.
UNIT II	National Policies: National Health Policy 2002, National Rural Health Mission, National Population Policy 2000, National AIDS Prevention and Control Policy, National Blood Policy, National Policy for the empowerment of Women 2001, National Charter for Children 2003, National Youth Policy 1998, National Policy for Older Persons 1999, National Nutrition Policy, National Health Research Policy, Pharmaceutical Policy, National Policy on Education, National Water Policy 2002, National Environment Policy 2004, National Conservation Strategy & Policy Statement on environment & Development 1992, National Housing and Habitat Policy 1998, National Policy on Resettlement and Rehabilitation Project for Affected Families 2003
UNIT III	Overview of Public health in developing and developed countries, International Organizations in Health care, WHO, Objectives, Work of WHO, its structure and Regions, Non-Governmental Organization and Other Agencies. Globalization and Health, Impact of health care financing, Service provision, protection and Promotion under globalization. National Health Programs: Reproductive and Child Health –II, Revised National Tuberculosis Control Program (RNTCP): DOTS strategy, National AIDS control Program, Vector Borne Disease Control Program, National Anti-Malaria program, Kala-azar Control Program, National filarial Control Program, Japanese Encephalitis Control Program, Dengue & Dengue Hemorrhagic Fever, Yaws Eradication Program, National Leprosy Eradication Program, Guinea Worm Eradication Program.
UNIT IV	Integrated disease surveillance Project 2004-2009, National Surveillance Program for Communicable Diseases, Nutritional Programs, National Program for control of Blindness, National Iodine Deficiency disorders Control Program and Project against Micronutrient Malnutrition, National Mental Health

	Program, National Cancer Control Program, National diabetes Control Program, National Cardio-vascular diseases Control Program, Rabies Control Program, India Population Projects (IPP), Oral Health Project., Program of Rational Use of Drugs in Delhi State, Programs and schemes for Disabled Persons, National Emergency Preparedness Plan: disaster Management, School Health Services, Tenth Five Year Plan, Basic Minimum Service Program, Programs for Water and Sanitation, National Program of Improved Chulha, Evaluation of a National Health Programs
<b>NOTE:</b>	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.

<b>Essential Reading</b>	
1.	J. Kishore, 2010 (8th edition), National Health Programs of India: National Policies and Legislation related to health, Century Publications.
2.	J P Gupta , A K Sood, 2005 (1st edition), Contemporary Pubic Health-Policy, Planning, Management, Apothecaries foundation, New Delhi.
3.	D.K. Taneja, 2008 (7th edition), Health Policies and Programmes in India, Doctors Publications.
4.	Michael H. Merson, Robert E. Black, and Anne J. Mills, 2005 (2nd edition), International Public Health: Diseases, Programs, System and Policies, Jones and Bartlett Publishers.
<b>Reference Books</b>	
1.	Issel, LM. 2009(2 <sup>nd</sup> edition), Health Program Planning and Evaluation: A Practical, Systematic Approach for Community Health , Boston: Jones and Bartlett Publishers.
2.	HPDP, 2003(1 <sup>st</sup> edition) The Future of the Public's Health in the 21st Century, Institute of Medicine, NAP Publication.
3.	Rossi, PH, Lipsey, MW and Freeman HE. 2004(7 <sup>th</sup> edition). Evaluation: A Systematic Approach Thousands Oaks, CA: Sage Publications, Inc.

## SEMESTER – IV

MPH- 401		PUBLIC HEALTH LAWS, ETHICS AND HUMAN RIGHTS	
		Theory	80 marks
		Workshop	50 marks
		Internal Assessment	20 marks
		Hours	5-6/unit
To understand about public health laws, ethics, human rights and its application in the improvement of health of the community.			
UNIT I	Public Health Ethics, Comparison of Ethics in medical care and Public Health, Ethics in research. Legislation related to Health, National Health Bill-2009, and Role of Doctors in Society, Quality of Medical Education, The Indian Medical Council Act (Professionals Conduct & Ethics) & Regulations, 2002, the Indian Nursing Council Act, 1947, the Dentists Act-1948, the Pharmacy Act, 1948, The Rehabilitation Council of India Act, 1992, The Indian Medicine Central Council Act, 1970, The Homeopathy Central Council Act, 1973.		
UNIT II	General concept of human rights; the linkage between Health and Human Right, Promotion of health through human right, Impact of violation of human rights on health. Role of National/International agencies in protection of human rights, Health fascism, Health imperialism, Paternalism, Health commercialism,		
UNIT III	The Registration of Birth & Death Act, 1969, Child Marriage Act 1929, Bonded Labour Act 1976, Abolition Child Labour (protection & regulation) act 1986, Medical Negligence & Inefficacy of Indian medical council Act 1916, Consumer Protection Act 1989, MRTP Act 1969, Pre-natal and diagnostic technique Act, 1994, Legislative approach to health promotion, Drugs & Cosmetics 1940, Law of tort, PIL, Factory Act, water, Environment Act.		
UNIT IV	International Health instruments in Public Health in the area of AIDS/HIV, Disabled people, Human experimentation, surrogate mother, Mental health, Organ transplant, Reproductive health. The Cigrates & other Tobacco Products Act, 2003.		
Workshop	To be conducted by students on given topics and evaluated by the teachers.		
NOTE:	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.		

Essential Reading	
1.	Sudhir Anand, Fabienne Peter, Amartya Sen, 2006(1 <sup>st</sup> edition), Public Health Ethics and Equity, Oxford publication.
2.	Grad, FP. 2005 (3 <sup>rd</sup> edition), Public Health Law Manual. American Public Health Association.
3.	Gupta M C. 2001 (1 <sup>st</sup> edition), Health and Law, Karnataka publications and Distributors.
4.	Furrow, BR, Greaney, TL, Johnson, SH, Jost, TS, and Schwartz, RL. 2008(6 <sup>th</sup> edition), Health Law: Cases, Materials and Problems, St. Paul. West Group.
5.	Richards, Edward P., J.D., and Rathbun, Katharine C., M.D., 1999 (1 <sup>st</sup> edition), Medical Care Law. Gaithersburg, Maryland: Aspen Publishers.

Reference Books	
1.	Gifis, SH. 2003(5 <sup>th</sup> edition), Law Dictionary. Barron's Educational Series, Inc.
2.	JagannathMohanty, 2008(1 <sup>st</sup> edition), Human Rights Education, Deep and Deep Publications Pvt. Ltd.
3.	Loyd F. Navick, Cynthia B. Morrow, Glen P. Mays, 2008 (2nd edition) Public Health Administration: Principles for Population based Management, Jones & Bartlett Publishers.

MPH-402	HEALTH EDUCATION AND COUNSELLING	
	Theory	80 marks
	Workshop	50 marks
	Internal Assessment	20 marks
	Hours	5-6/unit
To familiarize the students with the effective health information, education, communication and important public health issues by using latest technologies.		
UNIT I	Human behavior, Defining behavior, Linkage between behavior and health. Intention, Enabling factor, Social Pressure, (Significant others, Subjective norms) Culture. Traditions, Beliefs, Norms, Customs, Values, Attitudes. The Health Belief Model The BASNEF Model, Health Education, Health Promotion. Ethics of Health promotion	
UNIT II	Communication (Components, of communication, hindrances in Communication. The message content. Nonverbal communication, One to one communication, Group communication (Group dynamics, Problems), Characteristics of effective health communication. Different learning strategies (Participatory, role play, problem-solving exercises, cares studies, games, other techniques) Using learning aids-Popular Media (storytelling, theatre, puppets, songs, visual art)	
UNIT III	Learning in adult, Working with children and young people. Health education in pre-school child, school aged child, adolescents, and young adults. Schools and Health education (significance, services, school health education programmes).Working with communities, community participation, (Benefits, process), Community and Health education (planning, objectives, needs, other sectors)	
UNIT IV	Practicing Health education. Planning and executing a complete programme on health education. (Aims, objectives, research, evaluation), work plan, Managing and organizing the programme/ training/workshop organizing, IEC (information education communication) methods, Handout, teaching material. Generating teaching material in vernacular language.	
Workshop	To be conducted by students on given topics and evaluated by the teachers.	
NOTE:	Examiner will set a total of <b>nine</b> questions comprising <b>two</b> questions from each Unit, and <b>one compulsory question</b> of short answer type, covering the whole syllabus. It will consist of <b>eight short answer questions</b> of 2 marks each. <b>Students will attempt one question from each unit and the compulsory question.</b> All questions may carry equal marks.	

<b>Essential Reading</b>	
1.	John Hubley, 2004 (2 <sup>nd</sup> edition), Communicating Health –An action guide to health education and health promotion. McMillan Publication
2.	S.L. Goel, 2007( 1 <sup>st</sup> edition), Health Education, Deep & Deep Publications Pvt. Ltd.
3.	S.L. Goel, 2008 (1 <sup>st</sup> edition), Health Education Administration, From International to Village Level, Deep & Deep Publications Pvt. Ltd.
4.	Manoj Sharma and Johan A. Romas, 2007 (2 <sup>nd</sup> edition), Theoretical Foundation and Health Promotion, Jones and Bartlett Publishers.
<b>Reference Books</b>	
1.	Arience J. Lowenstein, LymFoord- May, June C. Romano, 2009(1 <sup>st</sup> edition), Teaching Strategies for Health Education & Health Promotion, Working with Patients, families and Communities, Jones and Bartlett Publishers.
2.	S.L. Goel, 2009 (1 <sup>st</sup> edition), Education of Life style & Lifetime Diseases, Deep & Deep Publication Pvt. Ltd.
3.	Sarafino, E., 2008 (6 <sup>th</sup> edition), Health Psychology: Bio-psychosocial Interactions. J. Wiley & Sons.