FACULTY OF SCIENCE

SYLLABI

FOR

MASTER IN PUBLIC HEALTH

(SEMESTER SYSTEM)

EXAMINATIONS 2017-18
# SCHEME OF STUDY

## SEMESTER- I

<table>
<thead>
<tr>
<th>SUBJECT CODE</th>
<th>NAME OF THE SUBJECT</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>HOURS PER WEEK</th>
<th>CREDITS</th>
<th>MARKS</th>
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<tbody>
<tr>
<td>MPH-101</td>
<td>Basic Concepts in Public Health</td>
<td>4</td>
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<td>MPH-102</td>
<td>Basic Epidemiology-I</td>
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<td>MPH-103</td>
<td>Maternal and Child Health</td>
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<tr>
<td>MPH-104</td>
<td>Basic Computing and Research Methodology</td>
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<td>MPH-105</td>
<td>Open Elective – Environmental Health</td>
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<tr>
<td>MPH-106</td>
<td>Basic Concepts in Life Sciences OR Basic Concepts in Social Sciences</td>
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**TOTAL** 34 HOURS 26 650

**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

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<td>MPH-201</td>
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<td>MPH-202</td>
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<td>MPH-203</td>
<td>Survey Methods</td>
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<td>MPH-204</td>
<td>Public Health in Emergencies, Disasters and Conflicts</td>
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**TOTAL** 32 HOURS 26 650
### SEMESTER- III

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<td>MPH-302</td>
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<td><strong>30 HOURS</strong></td>
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### SEMESTER- IV

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<th>T</th>
<th>W*</th>
<th>HOURS PER WEEK</th>
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<th>MARKS</th>
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<tbody>
<tr>
<td>MPH-401</td>
<td>Public Health Law, Ethics and Human Rights</td>
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<tr>
<td>MPH-402</td>
<td>Health Education and Counselling</td>
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<td><strong>38 HOURS</strong></td>
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W* (Workshop)

**Total Credits = 100**

- Semester I = 26
- Total Marks = 2500
  - Semester I = 650
- Semester II = 26
  - Semester II = 650
- Semester III = 24
  - Semester III = 600
- Semester IV = 24
  - Semester IV = 600

**Open Elective**

- Occupational Health and Safety Management
- Genetics and Public Health
- Global Health

**Department Elective**

- Public Health in India and World
- Health for Special Groups/Populations
**SEMESTER I**

**MPH-101  BASIC CONCEPTS IN PUBLIC HEALTH**

<table>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Internal Assessment</td>
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</table>

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


**NOTE:**  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.

**SUGGESTED READING**

1. K. Park, 20013 (22nd edition), Textbook of Preventive and Social Medicine, Banarsi das Bhanot.


**FURTHER READING**


**MPH-102 BASIC EPIDEMIOLOGY-I**

<table>
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</thead>
<tbody>
<tr>
<td></td>
<td>80 marks</td>
<td>50 marks</td>
<td>20 marks</td>
</tr>
</tbody>
</table>

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

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) |
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</thead>
<tbody>
<tr>
<td>UNIT II</td>
<td>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).</td>
</tr>
<tr>
<td>UNIT III</td>
<td>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</td>
</tr>
<tr>
<td>UNIT IV</td>
<td>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</td>
</tr>
</tbody>
</table>

**Practical’s**
- Basic measurements in epidemiology (rates, ratios and proportions)
- Measurements of mortality and morbidity (prevalence and incidence).
- Applied aspects of study designs.
- Food poisoning estimation
- Planning of cross-sectional and case control study
- Planning of cohort study
- Birth and death rate
- Sample size calculation
- Collection of data through questionnaire

**NOTE:** 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.
## SUGGESTED READING


## FURTHER READING

1. K. Park, 2013 (22nd edition), Textbook of Preventive and Social Medicine, BanarsidasBhanot.
### MPH-103  MATERNAL AND CHILD HEALTH

<table>
<thead>
<tr>
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<th>80 marks</th>
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<tbody>
<tr>
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<td>20 marks</td>
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</tbody>
</table>

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

#### NOTE:
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.

### SUGGESTED READING

5. K.Park, 2013 (22nd edition), Textbook of Preventive and Social Medicine, BanarsidasBhanot.
<table>
<thead>
<tr>
<th>No.</th>
<th>Author(s)</th>
<th>Title</th>
<th>Publisher</th>
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**FURTHER READING**


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**MPH-104 BASIC COMPUTING AND RESEARCH METHODOLOGY**

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<thead>
<tr>
<th>Component</th>
<th>Theory</th>
<th>Practical (Computer)</th>
<th>Internal Assessment</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>80</td>
<td>50</td>
<td>20</td>
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</tbody>
</table>

- **Theory:** 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:** 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
Computers

• 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.
• 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. Format your sheet suitably using various features.
• 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.
• Using Microsoft PowerPoint, design a presentation to create awareness about hygiene among kids. Make use of interesting pictures and animations.
• Using Microsoft PowerPoint, design a presentation for your academic seminar. Make use of hyperlinks, buttons, custom animations etc.
• Use of anti plagiarism software
• Reference writing
• Data entry using Epi-Info

NOTE: 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.

SUGGESTED READING


FURTHER READING


3. Douglas Goldstein, Peter J. Groen, Suniti Ponkshe, Mare Wine, 2007(1st edition), Medical Informatics
MPH-105 ENVIRONMENTAL HEALTH (OPEN ELECTIVE)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>80 marks</td>
<td>50 marks</td>
<td>20 marks</td>
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</table>

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
- pH and EC estimation
- field visit to Pollution control board/ meteorology department
- Fluorosis and fluorides estimation
- Water surveillance
- Vector borne disease surveillance like dengue etc.
- Community engagement in waste management
- Creating awareness among community about sanitation and health
• Water and air sampling

**NOTE:** 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.

### SUGGESTED READING

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>4.</td>
<td>Nancy Irwin Maxwell 2010(1&lt;sup&gt;st&lt;/sup&gt; edition), Understanding Environmental Health, Jones and Bartlett Publishers</td>
</tr>
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<td>5.</td>
<td>K. Park, 2013 (22&lt;sup&gt;nd&lt;/sup&gt; edition), Textbook of Preventive and Social Medicine, BanarsidasBhanot.</td>
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### FURTHER READING

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<tr>
<td>2.</td>
<td>J.S. Mathur, 2007 (1&lt;sup&gt;st&lt;/sup&gt; edition), Textbook of Preventive and Social Medicine, CBS publishers.</td>
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### BRIDGE COURSE

<table>
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<tr>
<th>MPH- 106 (A)</th>
<th>BASIC CONCEPTS IN LIFE SCIENCES (FOR NON-SCIENCE STUDENTS)</th>
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<tbody>
<tr>
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**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)

<table>
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<tr>
<td>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.</td>
<td></td>
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</tbody>
</table>

UNIT I  Basic concepts in Sociology- Meaning of sociology, scope of sociology, sociological prespectives, significance of sociology for students of Public Health. Basic concepts- Society, Culture, Group and Community.


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 Maxeins 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 port of society and culture. Use of case studies to improve understanding of health and culture.

SEMESTER – II
<table>
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<th>MPH- 201</th>
<th>BIOSTATISTICS</th>
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<td><strong>Practical</strong></td>
<td>50 marks</td>
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<tr>
<td><strong>Internal Assessment</strong></td>
<td>20 marks</td>
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</table>

**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**
- Frequency Tables, Graphs, Measure of location, dispersion, skewness and Kurtosis.
- ROC curves, relative risk, odds ratio
- Scatter Diagram, correlation, Spearman’s rank correlation
- Regression, Multiple Regression, Logistic Regression
- Test of hypothesis, Parametric and Non-parametric
- Survival Analysis
- ANOVA (one way and two way classification)
(Using SPSS only)

**NOTE:** 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.

**SUGGESTED READING**


4. Sylvia Wassertheil-Smoller, 2004 (3rd edition), Biostatistics and Epidemiology: A Primer for Health and Biomedical Professionals.


**FURTHER READING**


<table>
<thead>
<tr>
<th>MPH-202</th>
<th>OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT</th>
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<tr>
<td><strong>It will introduce about the concepts of occupational health, hazards and safety management and various diseases related to the discipline.</strong></td>
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**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, 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, prevention of 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 contaminants 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**

- First Aid
- Safety at workplace
- Assessment of exposure to chemical
- Study on hazardous chemical in Community Environment
- Organize / participate in various teaching / training programmes for various population groups such as PG students/academicians/industrials medical officer.

**NOTE:**

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.
SUGGESTED READING


FURTHER READING


MPH-203 | SURVEY METHODS

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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.

**Practical**

- To design a questionnaire for specific type of Survey
- To calculate sample size to get a representative sample
- To understand different sampling methods in a particular survey
- To understand qualitative and quantitative research design
- Uses of different scales in survey (e.g. Likert scales)
- Referencing in report writing (e.g. APA style, MLA Style, Harvard Style, Chicago Style, Vancouver Style)

**NOTE:** 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.

**SUGGESTED READING**


**FURTHER READING**


### MPH-204

**PUBLIC HEALTH IN EMERGENCIES, DISASTERS AND CONFLICTS**

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**It will introduce about the fundamentals of emergencies, disaster and outbreak management.**

#### UNIT I

**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.

#### UNIT II

**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.**

#### UNIT III

**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

#### UNIT IV

**Epidemics: Safe and Hygienic food, Maintenance of infection free environment, maintaining mental health during and after disasters. Rehabilitation after the outbreak.**

**Field Visit**
- SDMA
- Meteorological Deptt.

**NOTE:** 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.

### SUGGESTED READING


It will introduce about the basics of genetics, community genetics, genetic abnormalities and their assessment.

**UNIT I**

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.

**UNIT II**

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).
UNIT III
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.

UNIT IV
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

NOTE:
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.

SUGGESTED READING

FURTHER READING

MPH-205 (B): GLOBAL HEALTH (OPEN ELECTIVE)

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It will introduce about the health of populations in a global context and trends of various communicable and non communicable diseases.

UNIT I
Concept of Globalization- Global health and public health, 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
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<tr>
<th>UNIT II</th>
<th>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.</th>
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<tr>
<td>UNIT III</td>
<td>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.</td>
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<tr>
<td>UNIT IV</td>
<td>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.</td>
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### SUGGESTED READING


### FURTHER READING


**SEMESTER – III**

**MPH- 301 | BASIC EPIDEMIOLOGY-II**

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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.

**UNIT I**
Epidemiology of communicable diseases: Smallpox, chickenpox, Measles, Rubella, Mumps, Influenza, Diphtheria, Whooping cough, Meningococcal meningitis, Acute respiratory infections, SARS, Tuberculosis, Poliomyelitis, Viral hepatitis, Acute diarrhoeal diseases, Cholera, Typhoid fever, Food poisoning, Amoebiasis, Ascariasis, Hookworm infection, Dengue, Malaria.

**UNIT II**
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, Trachome, Tetanus, Leprosy, STD, Yaws, AIDS. various steps for investigation of outbreaks.

**UNIT III**
Epidemiology of Non-communicable diseases: CVD, Coronary heart disease, Hypertension, Stroke, Rheumatic heart disease, Cancer, Diabetes, Obesity, Blindness, Accidents and Injuries.

**UNIT IV**
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, multifactorial disorders, methods in genetic epidemiology, human genome, Oral Health-dental caries, periodontal disease, Oral cancer

Practical (Three)
- Investigation of an outbreak of diarrhoea/cholera/food poisoning (Any one)
- Investigation of an outbreak of dengue/malaria/chikungunya fever (Any one)
- Screening of Non-communicable disease

**NOTE:** 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.

**SUGGESTED READING**


### MPH-302 HEALTH SERVICES PLANNING AND MANAGEMENT/HEALTH ECONOMICS

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**To acquaint the students with the health service planning and management techniques. To introduce about the health economics principles.**

#### UNIT I

#### 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, 11th Five Year Plan. Health Systems in India at the Centre, the State and the District Level.

#### UNIT III
**UNIT IV**


**NOTE:** 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.

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<th>FURTHER READING</th>
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<tr>
<td>4. Issel, L.M., 2009 (2nd edition), Health Program Planning and Evaluation: A practical systematic approach for community health, Sudbury, Jones and Barlett Publishers</td>
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## MPH-303 HEALTH INFORMATICS

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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.

### UNIT I

### UNIT II
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: Definition, features, potential benefits and cost benefit analysis of EHR, EHR adoption, steps in its implementation, Electronic medical records, personal health records, EHR/EMR software, application and resources. Health Care quality: definition and explanation, medical errors and patient safety, computerized provider/physician order entry, functions and application, privacy and confidentiality of patient data/records.

### UNIT III
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. Evidence based medicine: Definition, concepts, advantages, applications, EBM process, quality of evidence, evidence based practice, medical decision making, clinical decision support system, limitation of evidence based medicine.

### UNIT IV

**Practical**
- Practical aspects of Electronic Health Records and Computerized Provider Order Entry (CPOE)
- Application of Telemedicine in transfer of health records
- Development of a health related web portal
- Using open access resources and evidence based practice

**NOTE:**
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.

**SUGGESTED READING**


FURTHER READING


MPH-304 (A) HEALTH FOR SPECIAL GROUPS/ POPULATIONS (ELECTIVE)

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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.

UNIT I


UNIT II


UNIT III

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

UNIT IV

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
Field Visits

- Field visit to health center for exposure regarding adolescent health/elderly health. (Any one)
- Field visits to old age home/regional institute of mental health/blind home. (Any one)

NOTE: 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.

SUGGESTED READING


FURTHER READING


MPH-304 (B):

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<tr>
<th>PUBLIC HEALTH IN INDIA AND WORLD (ELECTIVE)</th>
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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.
**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**


**UNIT III**


**UNIT IV**


**NOTE:** 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.

**SUGGESTED READING**

to health, Century Publications.


**FURTHER READING**


**SEMESTER – IV**

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<tr>
<th>MPH- 401</th>
<th>PUBLIC HEALTH LAWS, ETHICS AND HUMAN RIGHTS</th>
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To understand about public health laws, ethics, human rights and its application in the improvement of health of the community.

**UNIT I**


**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.
## UNIT III

## UNIT IV

## Workshop
To be conducted by students on given topics and evaluated by the teachers.

## NOTE:
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.

## SUGGESTED READING

## FURTHER READING

## MPH-402
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<tr>
<th>HEALTH EDUCATION AND COUNSELLING</th>
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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 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.

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