FACULTY OF SCIENCE
SYLLABI

FOR

MASTER IN PUBLIC HEALTH
1st to 4th SEMESTER
EXAMINATION 2013-2014

--:0:--
# 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>
</tr>
</thead>
<tbody>
<tr>
<td>MPH-101</td>
<td>Basic Concepts in Public Health</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>MPH-102</td>
<td>Basic Epidemiology-I</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>MPH-103</td>
<td>Maternal and Child Health/Reproductive Health and Family Planning</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>MPH-104</td>
<td>Basic Computing and Research Methodology</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>MPH-105</td>
<td>Open Elective – Occupational Health and Safety Management</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>MPH-106</td>
<td>Basic Concepts in Life Sciences OR Basic Concepts in Social Sciences</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>NC</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**                                                                 32 HOURS 25 600

## PLEASE NOTE

There will be a Bridge Course (MPH-106 - Non-Credit) of 50 marks in the first semester, which is a deficiency course for eligibility only. Marks will not be included in the grand total.

## SEMESTER- II

<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>
</tr>
</thead>
<tbody>
<tr>
<td>MPH-201</td>
<td>Biostatistics</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>MPH-202</td>
<td>Environmental Health</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>MPH-203</td>
<td>Survey Methods</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>MPH-204</td>
<td>Public Health in Emergencies, Disasters and Conflicts</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>MPH-205</td>
<td>Open Elective - Genetics and Public Health OR Global Health</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

**TOTAL**                                                                 27 HOURS 26 650
<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>
</tr>
</thead>
<tbody>
<tr>
<td>MPH-301</td>
<td>Basic Epidemiology-II</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>MPH-302</td>
<td>Health Services Planning and Management /Health Economics</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>MPH-303</td>
<td>Medical Bioinformatics and Computational Sciences</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>MPH-304</td>
<td>Elective-Health for Special Groups/Populations OR Public Health in India and World</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

|                      | Internship                                               | - | - | - | -              | 3       | 50    |
|                      | Dissertation                                             | - | - | - | 8              | 4       | -     |

| TOTAL               |                                                        |   |   |   |               | 29      | 27    |

<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>
</tr>
</thead>
<tbody>
<tr>
<td>MPH-401</td>
<td>Public Health Law, Ethics and Human Rights</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>150</td>
</tr>
<tr>
<td>MPH-402</td>
<td>Health Education and Counselling</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>150</td>
</tr>
<tr>
<td>MPH-403</td>
<td>Dissertation</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td>12</td>
<td>150</td>
</tr>
</tbody>
</table>

| TOTAL               |                                                        |   |   |   |               | 34      | 22    |

**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

**TOTAL CREDITS**
- Semester I = 25
- Semester II = 26
- Semester III = 27
- Semester IV = 22

**TOTAL MARKS**
- Semester I = 600
- Semester II = 650
- Semester III = 550
- Semester IV = 450

**PLEASE NOTE**
1. Internship will be for 45 days (between Mid of May to 1st week of July), arranged by the students themselves and they have to submit the report for the same period.
2. Only the internship with valid institution/organization will be recognized.
3. Dissertation work will begin in 3rd Semester and will be completed in 4th Semester. It will include synopsis presentation, submission and evaluation of dissertation and viva-voce.
DETAILED SYLLABUS OF STUDY

SEMESTER I

MPH-101 BASIC CONCEPTS IN PUBLIC HEALTH

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>80 marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal Assessment</td>
<td>20 marks</td>
</tr>
</tbody>
</table>

It will introduce about the definition, concept, history, dimensions, determinants and interdisciplinary nature of Public Health.

UNIT I


UNIT II


UNIT III


UNIT IV

The infrastructure of Public Health, Human resources in Public Health, Information resources, Organizational resources, Social capital perspective of Public Health, delivery of health care services.

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-102

<table>
<thead>
<tr>
<th>BASIC EPIDEMIOLOGY-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam</td>
</tr>
<tr>
<td>Internal Assessment</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, Applications and uses of epidemiology, Issues and problems of epidemiology.

UNIT II

Basic measurements in epidemiology (rates, ratios and proportions), Measurements of mortality Measurements of morbidity (prevalence and incidence), Methods of descriptive epidemiology, analytical epidemiology, experimental epidemiology.

UNIT III

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).

UNIT IV

Infectious disease epidemiology, Disease transmission. Disease prevention and control, Host defenses/immunizing agents.

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, 2009 (22nd edition), Textbook of Preventive and Social Medicine, Banarsidas Bhanot.
2. M.C. Gupta and B.K. Mahajan, 2005 (3rd edition), Textbook of Preventive and Social Medicine, Jaypee
MPH-103

MATERNAL AND CHILD HEALTH/ REPRODUCTIVE HEALTH AND FAMILY PLANNING

<table>
<thead>
<tr>
<th>Final Exam</th>
<th>80 marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Assessment</td>
<td>20 marks</td>
</tr>
</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

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). 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.

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.

UNIT III


UNIT IV

Factors specific to Indian situations leading to maternal and child health, Indicators of MCH care, Delivery and organization of MCH/FP services, 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, Banarsidas Bhanot.
## MPH-104  BASIC COMPUTING AND RESEARCH METHODOLOGY

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>Internal Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Final Exam</strong></td>
<td>80 marks</td>
<td></td>
</tr>
<tr>
<td><strong>Internal Assessment</strong></td>
<td>20 marks</td>
<td></td>
</tr>
</tbody>
</table>

It will introduce about the basics of computer system, softwares 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 types and applications–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.

### UNIT III
- Basic elements of research – research problem: selection and formulation of objectives; review of literature, on line search of literature, hypothesis, study design (Qualitative, Quantitative) Retrospective & Prospective studies, Long/Cross cases), sampling and methods of data collection

### UNIT IV
- Data processing: Editing, coding, classification and tabulation, Data analysis, thesis/dissertation writing, paper writing, Questionnaire Design, Interview technique, Proposal writing, Report writing.

### 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

---

**FURTHER READING**

6. National Institute of Nutrition, Popular Publications, Hyderabad-500 007, India
### MPH-105
**OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT (OPEN ELECTIVE)**

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>80 marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal Assessment</td>
<td>20 marks</td>
</tr>
</tbody>
</table>

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 classifications, ergonomics, hazardous agents in the workplace, occupational hazards (physical, chemical, biological, mechanical, psychological), common occupational diseases (pneumoconiosis, Anthracosis, Byssinosis, Bagassosis, Asbestosis, Farmer’s lung and lead poisoning), occupational cancer (skin cancer, lung cancer, bladder cancer, leukemia).

### UNIT II
**Injuries:** definition, types of injuries, intentional (homicide, assault, suicide etc.) and unintentional (motor vehicle crashes, falls, poisonings, fires, etc.) injuries, epidemiology of intentional and unintentional injuries, risk factors in intentional and unintentional injuries, prevention through epidemiology, community approaches to the prevention of unintentional injuries, violence in our society and resources for prevention, cost of injuries to society.

### UNIT III
**Safety and health in the workplace,** importance of occupational safety and health to the community, occupational safety and health acts, overview of recent trends in workplace injuries and illness, unintentional injuries in the workplace, prevention and control of unintentional injuries in the workplace, intentional workplace injuries, occupational illness and disorders, resources for the prevention of workplace injuries and diseases.

### UNIT IV
**Extent of industrial pollution,** public exposure from industrial sources, major chemical contaminants of concern in the general environment and the workplace, the social context of occupational health and safety, dimensions of types of occupational health problems, Sickness absenteeism, causes of accidents in industry, industrial accidents (Bhopal gas tragedy and London fog smog), measures of health protection of workers in India, (medical, legislation, engineering and administration).

**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- 106 (A)  |  BASIC CONCEPTS IN LIFE SCIENCES (FOR NON-SCIENCE STUDENTS)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIT I</td>
<td>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.</td>
</tr>
<tr>
<td>UNIT II</td>
<td>Body systems and related diseases- Digestive, Respiratory, Circulatory, Excretory, Reproductive, Nervous, Endocrine and Immune systems.</td>
</tr>
<tr>
<td>UNIT III</td>
<td>Genetics: Introduction to molecular genetics, DNA, RNA and proteins, genetic disorders.</td>
</tr>
<tr>
<td>UNIT IV</td>
<td>Microbiology: Microorganisms- Bacteria and Viruses. Their involvement in food borne diseases, diseases of various body systems caused by microorganisms.</td>
</tr>
</tbody>
</table>

**Final Exam**  |  50 marks

To develop basic understanding of science subjects in the non-science students.

## MPH- 106 (B)  |  BASIC CONCEPTS IN SOCIAL SCIENCES (FOR SCIENCE STUDENTS)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIT I</td>
<td>Basic concepts in Sociology- Meaning of sociology, scope of sociology, sociological prespevstives, significance of sociology for students of Public Health. Basic concepts- Society, Culture, Group and Community.</td>
</tr>
<tr>
<td>UNIT III</td>
<td>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.</td>
</tr>
<tr>
<td>UNIT IV</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Final Exam**  |  50 marks

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.
SEMESTER – II

MPH- 201   BIOSTATISTICS

Final Exam  80 marks
Internal Assessment  20 marks

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, variability (box and whisker plot), Skewness and Kurtosis. Intuitive concept of probability, conditional probability (Bayes theorem), Specificity, Sensitivity and ROC Curve, cohort study, case control study, randomized control trials, relative risk, odds ratio (Practical using SPSS only).

UNIT II
Random variables, probability mass function, probability density function, distribution function, expectation and variance, Bernoulli trials, Binomial, Poisson and normal distributions. Scatter diagram, correlation and Spearman’s rank Correlation Coefficient, Regression and multiple regressions (Practical using SPSS only).

UNIT III
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 testing for population proportions, paired t-test, chi-square tests. Yates' correction, goodness of fit, association & homogeneity. (Practical using SPSS only).

UNIT IV
Analysis of variance (ANOVA), one-way and two-way classification, Non-parametric: Sign-test, Wilcoxon Signed rank test, Mann-Whitney U-test. (Practical 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


FURTHER READING

<table>
<thead>
<tr>
<th>UNIT I</th>
<th>Basic concepts and definition of Environment, Different aspects of Environment (Physical, Biological and Social) Basic requirements for a healthy environment, Impact of Environmental factors on health, Nature of environmental hazards (Biological, Chemical, Physical, Mechanical and Psychosocial), Role of environmental health professionals.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIT II</td>
<td>Environmental pollution, water pollution and surveillance of drinking water quality, Hardness in water, air pollution and health, Vehicle pollution, ventilation, Light, Noise, Radiation, Nature of adverse effects on health and interventions.</td>
</tr>
<tr>
<td>UNIT III</td>
<td>Meteorological environment, Housing and health, Factors causing increased urbanization, urbanization and health. Solid waste problems in India, Solid and Bio medical waste management, Sanitation, Pesticide pollution, Food quality criteria and assurance, Food borne diseases and food poisoning, Vector and rodent control.</td>
</tr>
</tbody>
</table>

**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

It will introduce about the basics concept of survey designing, methodology, its testing and report writing.

UNIT I
Surveys: Definition, survey methods, survey sample & design, self administered questionnaires & interviews, questions & responses, planning for data analysis, pilot testing, response rate, reliability & validity, a survey continuum: from specific to general use, Open ended versus closed questions, rules for writing closed survey questions, rating scales: categorical, ordinal, numerical, additive, differential, summated scales.

UNIT II
Length of survey, questionnaire format- aesthetic & other concerns, branching questions or the infamous skip pattern, finding interviewers, training interviewers, conducting interviews, monitoring interviews quality, guidelines for pilot testing; ethics, privacy & confidentiality, informed consent, Sample size & responses rate, random sampling methods, systematic sampling, convenience sampling.

UNIT III
Survey design: cross sectional survey designs, longitudinal surveys or cohorts, comparison group survey designs: quasi & true experiments, normative & case control design, survey design validity, internal validity, external validity, content analysis, open-ended responses & comments, data management, creating a code book, entering the data, cleaning the data.

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.

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
5. Michael Jay Polonsky and David S. Waller, 2010 (2nd edition), Designing and managing a research project, saga publication
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**

**UNIT III**
Disaster management in health sectors, Disaster preparedness, Policy development, Disasters in India, Conflicts, Radiation Hazards, Stresses and Strains, Urban slum, Climate variations and public health. NDM Policy Disaster Management in India. Disasters Management Act 2005.

**UNIT IV**
Epidemics: Definition, Types of Epidemics, Major Epidemics, Control, Preventions. Outbreak investigation, Safe and Hygienic food, Maintenance of infection free environment, maintaining mental health during and after disasters. Rehabilitation after the outbreak.

**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 (A): GENETICS AND PUBLIC HEALTH (OPEN ELECTIVE)

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>80 marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Assessment</td>
<td>20 marks</td>
<td></td>
</tr>
</tbody>
</table>

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**
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, MDGs, 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.

**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

7. Dean T. Jamison, Joel G. Breman, Anthony R. Measham et al, 2006(2nd Edition), *Disease Control Priorities in Developing Countries*

### FURTHER READING


### SEMESTER – III

**MPH- 301 **

**BASIC EPIDEMIOLOGY-II**

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>80 marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal Assessment</td>
<td>20 marks</td>
</tr>
</tbody>
</table>

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**


**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


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.

SUGGESTED READING

FURTHER READING
3. Devi V. Renuka, Jhan M.Gowhar, 2011(1st edition), Health Economics : Issues and Challenges, New Delhi,
### MPH-303

**MEDICAL BIOINFORMATICS AND COMPUTATIONAL SCIENCES**

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>80 marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Assessment</td>
<td>20 marks</td>
<td></td>
</tr>
</tbody>
</table>

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
Bioinformatics Overview, Evolution of the discipline of Bioinformatics, The discipline of Biomedical Informatics, Major Research Areas, Biomedical Computing, Application and Challenges for Biomedical Computing, Medical Bioinformatics education in India, Information Retrieval and Scholarly Communications, Information Retrieval: Concept, Performance Measure, Data Mining: Concept, Applications, Scholarly Communications: Definition, Challenges, Solutions: Digital Libraries, Subject Gateways and Open Access, Open access Medical Bioinformatics Information Resources

#### UNIT II

#### UNIT III
Standards & Regulations: Standards: Basic Concepts, Standards and Interoperability, Identifier and Transaction Standards, Privacy, Confidentiality and Security, Health Information Exchange (HIE), Basic Concepts of Evidence-Based Medicine and Medical Decision Making, EBM Definition and Concept, Advantages and Applications of EBM, EBM Process overview (steps) Qualification of Evidence, Evidence-Based Practice: Databases, Statistics, Limitations of EBM

#### 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


### FURTHER READING

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
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

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 Institute of Social Defense, 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.

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): PUBLIC HEALTH IN INDIA AND WORLD (ELECTIVE)

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>80 marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal Assessment</td>
<td>20 marks</td>
</tr>
</tbody>
</table>

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

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
<table>
<thead>
<tr>
<th></th>
<th>Author(s)</th>
<th>Title</th>
<th>Edition</th>
<th>Publisher/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Issel, LM.</td>
<td>Health Program Planning and Evaluation: A Practical, Systematic Approach for Community Health.</td>
<td>2nd</td>
<td>Jones and Bartlett Publishers.</td>
</tr>
<tr>
<td>2.</td>
<td>HPDP</td>
<td>The future of the Public ’sHealth in the 21st Century, Institute of Medicine, NAP Publication.</td>
<td>1st</td>
<td></td>
</tr>
</tbody>
</table>
### SEMESTER – IV

**MPH- 401**  **PUBLIC HEALTH LAWS, ETHICS AND HUMAN RIGHTS**

<table>
<thead>
<tr>
<th></th>
<th>Final Exam</th>
<th>80 marks</th>
<th>Internal Assessment</th>
<th>20 marks</th>
</tr>
</thead>
</table>

**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, Health fascism, Health imperialism, Paternalism, Health commercialism, Ethics in research

**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**
- Public Health Law in the area of AIDS/HIV, Disabled people, Human experimentation, Mental health, Organ transplant, Reproductive health.

**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

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, Behavioral Diagnosis, 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), Patient education. 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) Problems in popular media.

**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) Time Evaluation.

**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 (informatics education communication) methods, Handout, teaching material. Generating teaching material in vernacular and international language.

**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**