



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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Curriculum for Master in Public Health

Amended upto BOM 55/2018, Dated 27/11/2018

Amended History

1. Approved as per BOM - 29/2013, Resolution No. 13, Dated 15/06/2013.
2. As Amended in BOM-55/2018 [Resolution No.4.13], Dated 27/11/2018.

**Master of Public Health (MPH)
(Under MGMIHS)**

Goal of MPH program:

1. To develop human resource with expertise in the field of public health and epidemiology,
2. who can ensure comprehensive health development of the community and better quality of life;
3. To create good advocates for launching public health movements;
4. To promote the understanding of the need to integrate social and cultural factors and determinants into the practice of public health;
5. To develop qualities that encourage the development of innovative and alternative approaches to meet the varying local needs of communities;
6. To train students in health services/systems research in order to encourage this as an integral part of health administration/management.

Eligibility Criteria:

1. Admission to the course:

The graduates from science background will be admitted for the course. Candidates from the field of sociology, Psychology, Nursing, Social work, Pharmacy, Medical and Paramedical will be admitted. They will get the admission by pre-entrance examination/ Interview/ personal assessment.

2. Course Implementation:

The course will be implemented by MGM School of Biomedical Sciences with the help of Dept. Of Community medicine, Navi Mumbai with the help of in-house and visiting faculties from other institutions.

3. Intake Capacity:

Total intake for this course will be 20.

A.R. Acad.

 21-3-13



Prof. Z. G. Badade
 Registrar,
 MGM Institute of Health Sciences
 Kamothe, Navi Mumbai-401209

Master of Public Health

Under MGMIHS

Sr. No.	Semester	Module	Credits	
1	Semester1 (Basics of Epidemiology)		Mandatory Courses **	4
		Module 1	Intro. To Public Health and Epidemiology	3
		Module 2	Basics of Biomedical Sciences	3
		Module 3	Immunology and Nutrition	6
		Module 4	Basics of Biostatistics	5
		Module 5	Demography	2
				23
2	Semester2 (Advances in Epidemiology)	Module 1	Applied Research Methods	8
		Module 2	Epidemiological study Designs	4
		Module 3	Communicable and Non-Communicable Diseases	4
		Module 4	Medical Entomology and Parasitology	3
		Module 5	Epidemiology of RCH	2
				21
3	Semester3 (Applied Epidemiology)	Module 1	Applications of Epidemiology for Public Health.	5
		Module 2	Diagnostics and Public health Surveillance	5
		Module 3	Optional ##	4
		Module 4	Environmental, occupational and urban health	3
		Module 5	Management of health service , organisations and evaluation	4
				21
4	Semester4 (Comprehensive Epidemiology)	Module 1	Research Project (Analysis, Evaluation, report writing, Review of Literature, Dissertation/ Thesis Defence)	15
		Module 2		
		Module 3		
		Module 4		

** Communication Skills and Ethics, Health Behaviour and counselling

**## Oncology /Cardiovascular Epidemiology / Genetics /Clinical Epidemiology /
Nutritional Epidemiology**

Semester I

Mandatory Courses (4 Credits)

1. Health Communication and Behaviour Change Communication

Communication Process, Function and Types, Barriers to communication, Mass Communication, Communication Skills, Community Participation Concepts and Types, Information, Education and Communication, IEC in Health and Family Welfare IEC structure in districts Innovative strategies and evaluation, Behavioural Change Communication Best practices and strategic approaches, BCC framework, implementation strategy, Target Audience Segmentation Different approaches to target audience, Physician – Patient Communication Why and how of physician – patient relationship, Data for IEC Planning Relationship Management.

2. Ethics in public health

History of ethics in health research, from Nuremburg trials, Helsinki principles, the Belmont Report and the ICMR guidelines, Govt. of India Regulations, Theories and Principles of Research Ethics, The various bioethics guidelines, Nuremburg, Helsinki, CIOMS, UNAIDS, Nuffield, GCP, etc. Concepts in research ethics – confidentiality and privacy, informed consent, vulnerable subjects and special treatments, standards of care – principles, Review processes etc. Application of the various principles for ethical decision making Institutionalising ethics – formation of IRBS and development of guidelines including OHRP and FWA approvals.

3. Counselling

1.1 Module 1: Introduction to Public Health and Epidemiology (3 Credits)

- Background & Teaming,
- Computer Knowledge & Usage Pattern Assessment
- Evolution of Medicine
- Public Health & Preventive & Social Medicine
- Epidemiology & Public Health
- Public Health & Population
- Introduction to Ethics in Public health
- Philosophical Basis for Public Health
- Concept of Health & Disease
- Concept & Levels of Prevention
- Screening For Disease
- Introduction to Epidemiology
- Aims of Epidemiology
- Epidemiological approach
- Basic measurements
- Epidemiological Methods

1.2 Module II: Biology (3 Credit)

- Introduction to Human Biology
- Definition & structure of cell, Tissue structure & its Type
- Organ Systems (Basic Anatomy & Physiology)
- Digestive system
- Skeletal system
- Respiratory system
- Cardiovascular System
- Lymphoid & haemopoiteic system 3

- Urinary system
- Nervous & the
- Special senses
- Female Reproductive System
- Male Reproductive system

1.3 Module 3: Immunology and Nutrition (6 Credits)

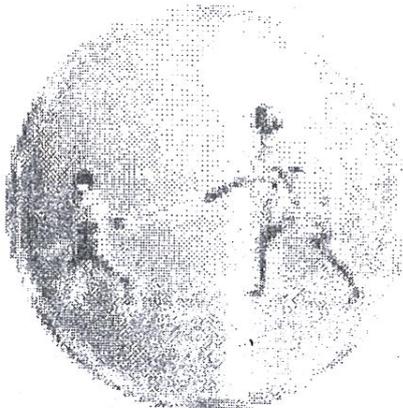
A. Immunology

1. Infection
2. Immunity
 - A) Innate Immunity
 - B) Acquired Immunity
 - C) Bacterial and Viral Vaccine
3. Antigen
4. Antibody
5. Antigen-Antibody Reaction
6. Complement System
7. Structure and function of immune system
8. Immune response
9. Immunodeficiency Diseases
10. Hypersensitivity
11. Autoimmune disorder
12. Transplantation immunology

B. Nutrition

1. Epidemiological aspects of Food and Nutrition, Nutritional epidemiology
2. The Proximate Principles- Proteins, Fats & Carbohydrates
3. Vitamins and Minerals
4. Major Foods and their Nutritive values
5. Nutritional requirements of special groups
6. Nutritional Disorders of Public Health importance
7. Protein energy malnutrition
8. Visit to ICDS Block / Anganwadi

10. Milk and Meat hygiene
11. Visit to Slaughter house, Deonar, Mumbai.
12. Nutritional intake assessment, Nutritional Anthropometry
13. Diet Standards and Diet Planning
14. Nutritional assessment and Surveillance
15. National Nutrition Programmes, National Nutrition Policy
16. Visit to Public Health Laboratory, CBD, Belapur
17. Visit to Warna Dairy Plant, Navi-Mumbai



MGM

Maternal and Child Health

1.4 Module 4: Basics of Biostatistics (5 Credits)

Bio-Statistics I

1. Introduction:

Introduction to Biostatistics, Applications and uses of Biostatistics, Common terms and notations used in Biostatistics. [1 Hour]

2. Arranging Data to convey meaning: Tables and Graphs [2 Hours]

Types of data, Data tabulation and graphical presentation of data, merits and demerits of tabulation and graphical presentation of data, Stem-Leaf display. Exercises and Assignments.

3. Descriptive statistics (Summary Statistics): [4 Hours]

Measures of central tendency: Need of measures of central tendency, Requisites of good measure of central tendency, various measures of central tendency such as: Arithmetic Mean, Weighted Mean, Geometric Mean, Harmonic Mean, Mode, Median, Quartiles, Deciles, and Percentiles with their merits and demerits, Graphical methods for Median and Mode, Empirical relation between Mean, Mode and Median. Exercises and Assignments..

Measures of Dispersion: Need and importance of measures of dispersion, requisites of a good measure of dispersion, absolute and relative measure of dispersion, various measures of dispersion such as Range, Coefficient of range, Mean Deviation from mean, Coefficient of mean deviation, Variance, Standard Deviation, and Coefficient of Variance with their significance, merits and demerits. Exercise and Assignments.

Measures of Skewness and kurtosis: Need of measures of skewness and kurtosis, Definition of skewness, types of skewness, Graphical method for skewness, Karl Pearson's coefficient of skewness with its interpretation, Definition of Kurtosis and Types of Kurtosis, Graphical Method for Kurtosis. Exercise Assignments.

4. Permutations and Combinations [2 Hours]

Addition principle of counting, Multiplication Principle of counting, Permutations, Combinations. Exercises and Assignments.

5. Probability [3 Hours]

Some basic concepts of set theory and probability. Addition theorem of probability, three types of probability, Probability rules, Probability under conditions of statistical independence. Probabilities under statistical dependence.

Exercises and Assignments.

Bio-Statistics II (16 Contact Hours)

1. Random variables:

[2 Hours]

Discrete random variables, Continuous random variable, their expectation, Mean Variance and Standard Deviation in terms of expectations.

Examples and exercises.

2. Discrete probability distributions:

[4 Hours]

Introduction o discrete probability distributions. The binomial distribution, The Poisson distribution, discrete uniform distribution etc. with their Mean, Variance and Applications.

Exercises and Assignments.

3. Continuous Probability distributions:

[4 Hours]

Introduction to continuous probability distributions, continuous uniform distribution, exponential distribution, Normal Distribution, properties and applications of normal distributions, Standard normal variable,

Exercises and Assignments.

4. Sampling and Sampling Distributions.

[3 hours]

Introduction to census and sampling, need for sampling, advantages and disadvantages of sampling, types of sampling- SRS, SRSWR, SRSWOR, Stratified sampling, Systematic sampling, Cluster sampling.

Introduction to sampling distribution, sample size and standard error. Central limit theorem (statement only). Exercises and Assignments.

5. Estimation:

[3 hours]

Introduction, Point estimation, Interval estimates- basic concepts, confidence intervals, Calculating intervals estimates of mean from large samples, calculating interval estimates of proportion from large samples, Interval estimates using t-distribution, determining sample size in estimation.

Exercises and Assignments.

Bio-statistics III (18 Contact Hours)

1. Hypothesis Testing: [4 hours]

Introduction, basics of hypothesis testing procedure, testing of hypothesis, Hypothesis testing of means- samples with population standard deviations known, hypothesis testing for difference between two means, measuring the power of hypothesis test, hypothesis testing of proportions- large samples, hypothesis testing for difference between proportions, P-value. Exercises and Assignments.

2. Chi-square test and Analysis of variance: [3 hours]

Introduction, Chi-square test of independence, Chi-square test for goodness of fit, Analysis of variance, Inference about a population variance, Exercises and Assignments.

3. Non-Parametric Methods: [2 hours]

Introduction to parametric statistics, The sign test for paired data, Rank sum test: The Mann-Whitney U test and Kruskal Wallis test, One sample run test, The Kolmogorov-Smirnov test. Exercises and Assignments.

4. Correlation: [5 Hours]

Definition of bivariate data, Covariance, Scatter diagram, Definition of correlation, types of correlation, Karl Pearson's correlation coefficient (r_{xy}), interpretation, coefficient of determination, various Properties of correlation coefficient, Merits and demerits of Karl Pearson's correlation coefficient, Spearman's rank correlation coefficient and its applications, merits and demerits. Introduction to Multivariate data and multiple correlations. Exercise and Assignments.

5. Regression: [4 Hours]

Definition, Two types of regression lines, regression coefficients, properties of regression coefficient, Limitations and errors in using regression and correlation analyses. Introduction to Multiple and logistic regression. Exercises and Assignments.

Practical I: (Using MS-Excel and SPSS)

[15 hours]

1. Introduction to Statistical analysis packages such as MS-Excel, SPSS, EpiInfo, Defining variables and Entering data into SPSS Data sheet.
2. Using MS-Excel and SPSS for presenting data using graphs and tables.
3. Calculating Descriptive statistics using MS-Excel and SPSS.
4. Correlation and Regression Analysis using SPSS and MS-Excel.
5. Logistic regression using SPSS.

Practical II: (Using MS-Excel and SPSS)

[15 hours]

1. T-tests using SPSS.
2. Crosstab and Chi-square test using SPSS.
3. Tests of Normality and homogeneity using SPSS.
4. ANOVA and POST.HOC Tests Using SPSS.
5. Nonparametric tests using SPSS.
6. Practical on GIS.



1.5 Module 5: (Demography) (2 Credits)

Demography I

1. Population and Development

[4 hours]

Introduction of Demography- Meaning and scope and its relation with other disciplines; Components of population growth and their interdependence; Measures of population change; Structure, distribution and sources of population data; Theories of population – Malthusian theory, Optimum theory of population; theory of demographic transition

2. Sources of demographic data in India:

[2 Hours]

Census- silent features of census including 2011 census; civil registration system in India; National Sample Survey Organisation; Demographic Surveys- National Family Health Survey; Relative merits and demerits of these sources.

3. Structure of Population

[4 Hours]

Population trends in the twentieth century; Population explosion – Threatened or real, distant or imminent; international aspects of population growth and distribution; Pattern of age and sex structure in more developed and less developed countries; Determinants of age and sex structure; Demographic effects of sex and age structure, economic and social implications; Age pyramids and projections – Individual aging and population aging.

4. Techniques of Analysis

[5 Hours]

Crude birth rate and death rate, Age specific birth rate and death rate, standardized birth rate and death rate. Study of fertility – total fertility rate, gross reproduction rate and net reproduction rate. Measurement of population growth rate – simple growth rate and compound growth rate.

Demography II

1. Fertility, Nuptiality and Mortality

[5 Hours]

Fertility – Concept and various measures of fertility such as- Total fertility rate, Gross reproduction rate and net reproduction rate; Factors affecting fertility – Socio-economic factors, economic status, health, education, nutrition, caste, religion, race, region, rural-urban and status of husband and wife; Nuptiality – Concept and analysis of marital status, single mean age at marriage; Synthetic cohort methods; Trends in age at marriage; Mortality – Death rates, crude and age-specific; Mortality at birth and infant mortality rate; levels and trends in more and less developed countries; Sex and age pattern of mortality; Factors for decline in mortality in recent past; Life table – Construction and uses; Concepts of stable population; Methods of population projection.

2. Migration and Urbanization

[3 Hours]

Concept and types – Temporary, internal and international; International migration – Its effect on population growth and pattern; Factors affecting migration; Theories of migration related to internal migration; Urbanization – Growth and distribution of rural-urban population in developed and developing countries.

3. Population and Development with Reference to India

[2 Hours]

Population, economy and environment linkages – Population, health, nutrition, productivity nexus; Population and human development issues; Culture and fertility; Demography and household economic behaviour.

4. Population Policy in India

[5 Hours]

Evolution of population policy in India – The shift in policy from population control to family welfare, to women empowerment; Family planning strategies and their outcomes; Reproductive health, maternal nutrition and child health policies; Population and strategies for human development of different social groups; social impact of new reproductive technologies and their regulation; The new population policy, Tasks before the National Population Commission.

Semester II

2.1 Module I: Communicable and Non-Communicable Diseases (8 Credits)

A. Communicable Diseases

a. Respiratory Infections:

1. Small pox, Chickenpox
2. Measles, Mumps, Rubella
3. Diphtheria, Whooping Cough
4. Influenza, Meningococcal Meningitis, SARS
5. Tuberculosis
6. ARI

1. Intestinal Infections

1. Diarrheal Diseases
2. Polio/ Hepatitis
3. Cholera, Typhoid, Food Poisoning
4. Amoebiasis/ Ascariasis/ Hookworm infection/Dranculosis

2. Arthropod borne Infections

1. Malaria
2. Dengue/ Lymphatic Filariasis
3. Zoonoses
 1. Rabies, Plague
 2. Human Salmonellosis, brubellosis, leptospirosis
 3. yellow fever, Japanese encephalitis
 4. KFD, chickengunia fever
 5. teniasis, hydatid disease, leishmaniasis
 6. rickessial zoonotes, scrub typhus, murine typhus, tizu typhus, q fever

4. Surface Infections

1. STD's/YAWS
2. HIV/AIDS
3. Leprosy
4. Trachoma, tetanus

B. Non-Communicable Diseases

- Intoduction to NCD Epidemiology

- Web Search on NCDs – I
- Epidemiology of CHD
- Cardiovascular Survey Methods
- Epidemiology of Hypertension / Stroke
- Epidemiology of Chronic Obstructive Pulmonary Diseases
- Epidemiology of Rheumatic Heart Disease
- Epidemiology of Diabetes Mellitus / Obesity
- Epidemiology of Cancers
- Epidemiology of Accidents & Injuries
- Epidemiology of Blindness
- Geriatrics & NCDs

2.2 Module 2: Medical Entomology and Parasitology (4 Credits)

A. Medical Entomology

- Arthropods of Medical Importance
- Transmission of arthropod-borne diseases
- Principles of arthropod control
- Individual arthropods

B. Parasitology

- General Introduction
- Protozoa
- Phylum Sarcomastigophora
- Phylum Apicomplexa
- Phylum Ciliophora
- Phylum Microspora
- Phylum Platyhelminthes: Class Cestoidea
- Phylum Platyhelminthes: Class Trematoda
- Phylum NematelminthesL Class Nematoda
- Examination of Stool for Parasites
- Cultural Examination
- Examination of Biopsy Material
- Treatment of Parasitic Infections.

2.3 Module 3: Applied Research Methods and Epidemiological study designs. (7 Credits)

Introduction

Research Process –

Review of literature, formulating a research problem, Identifying variables, constructing a hypothesis

Conceptualizing a Research Design- The research design, selecting a study design

Study designs-

Observational Studies-

- a. Descriptive studies,
- b. Analytical studies- Ecological, Cross-sectional, case Control, Cohort

Experimental Studies:

- a. Randomized controlled trials
- b. Community Intervention studies,
- c. Community Trials.

Sampling and survey methods and their application to public health research.

Survey design and planning, Interview schedule, questionnaire construction,

Data collection, Data management, Data coding procedures

Qualitative research methods.

Execution of a survey including –designing questionnaire, designing analysis tables, entry of data, analysis of collected data, evaluation of results, report writing, presentation of data.

2.4 Module 4: Epidemiology of RCH (2 Credit)

Nutritional requirements through the life cycle – pregnancy, lactation, infancy, pre-school, school going, adolescence, elderly.

- Physiology and special needs during pregnancy, lactation, infancy, childhood and adolescence, caloric requirements, iron and folic acid supplementation.
 - Relationship between maternal diet and pregnancy outcome.
 - Overview of the physiological and biochemical process underlying human lactation and nutritional needs for both mother and infant.
 - Maternal health and nutritional status, source of data, maternal mortality and issues relating to maternal health, gender issues and maternal health.
 - Role of nutritional factors in embryonic and postnatal development.
 - Relationship among nutrition, growth, and development during childhood and adolescence.
 - Child health and morbidity, neonatal, infant and child mortality, IMR and U5MR; link between mortality and malnutrition; nutritional needs and interventions for special groups, including obese children, adolescents, athletes, and eating disordered.
 - Breast feeding, weaning and supplementary feeding.
 - Nutritional assessment for normal and high-risk groups, psychological, social, and economic factors contributing to nutritional status.
- RCH-I, RCH-II, NRHM.

Semester III

3.1 Module 1: Applications of Epidemiology for public health (5 Credits)

- This will address the role of the epidemiologist in the governmental public health practice sector. Emphasis will be on developing a comprehensive understanding of public health surveillance systems, notifiable diseases, case definition development, disease reporting and the use of immunizations and other immuno-biologics for pre and post-exposure prophylaxis. The effect of changes in funding on the role of local, state, and central agencies in epidemiology programs, disease surveillance and control will be discussed. Students will have an opportunity to visit the public health laboratory participate in an outbreak investigation, and engage in active observership at a local public health department.

3.2 Module 2: Optional (5 credits)

3.2.1 Cancer Epidemiology

- It will review the socio-demographic magnitude of cancer, basic concepts of cancer biology and the causes of cancer. Methods for evaluating genetic factors, tobacco, alcohol, radiation, chemicals, pharmaceuticals, viruses and nutrition will be reviewed in lectures and by classroom discussion.

3.2.2 Cardiovascular Disease Epidemiology

- It will provide an overview of the major topics and issues in cardiovascular disease epidemiology including: 1) pathophysiology, 2) epidemiology of CVD (incidence, prevalence, mortality and morbidity) overall and in special populations, 3) major and putative risk factors for CVD including genetic, social and economic determinants, 4) methodologic issues in CVD research including surveillance and measures of CVD endpoints and relevant exposures, 5) major population-based studies of CVD in the US and globally, 6) primary and secondary CVD prevention, target groups for prevention, and community-based intervention studies, 7) treatment of CVD and major CVD trials, 8) CVD-related research occurring within the Department of Epidemiology.

3.2.3 Methods in Nutritional Epidemiology

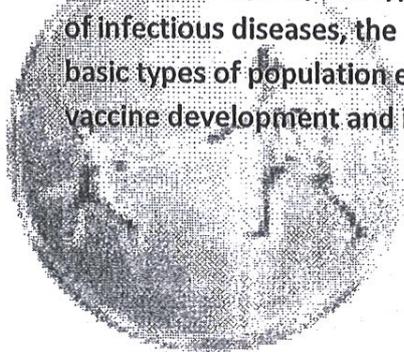
- This course focuses on the design, conduct, analysis and interpretation of epidemiologic studies addressing diet, human health and disease. The course will review methodological issues in quantitative epidemiological studies, including dietary assessment methods, sources of variation in the diet, energy intake, measurement error, and anthropometry and body composition, biomarkers of dietary intake, dietary patterns analysis, and gene-diet interactions. Students will advance their knowledge in nutrition research from a population perspective and gain experience in the collection, analysis, and interpretation of dietary intake data. Didactic lectures, active participation by students, computer exercises, and homework are utilized to allow students to gain hands-on experience on nutritional epidemiologic data analyses.

3.2.4 Public Health Genetics

- This course is designed for those interested in a basic understanding of human genetics that have had only a very limited exposure to biologic sciences. This course will cover the basics of genetics at both the molecular and population level. In addition to the basic science, some ethical, legal, and social implications of genetics research will be examined. Examples relevant to public health will be emphasized.

3.2.5 Vaccines in Public Health

- **Description:** Vaccines represent the most cost-effective medical intervention that has made a major effect on mortality reduction and population growth. This course will cover the epidemiological, statistical, biological, microbiologic, immunological principles, approaches and methods used in vaccine development and vaccination program design. Through a detailed discussion of the pathobiology, epidemiology, vaccine, and vaccination program design of a selected group of vaccine preventable diseases, the course will introduce the students to the major types of infectious diseases defined by the types of pathogens, the different transmission mechanisms of infectious diseases, the concept of population transmission dynamics, and the basic types of population effects of vaccination. Current issues and challenges in vaccine development and immunization practice will also be discussed.



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3.3 Module 3: Diagnostics and Public health Surveillance (4 Credits)

A. Diagnostics

Demonstration/study of

- Diagnosis of tuberculosis – demonstration of diagnostic algorithm for detection of sputum positive and negative cases, laboratory demonstration of acid fast bacilli, culture and staining
- Diagnosis of malaria--- thick and thin film preparation, identification of parasites
- Study of entomological specimens
- General bacteriological methods—gram staining and antibiotic susceptibility testing
- Stool culture and selective and enrichment procedure for microorganisms
- HIV/AIDS – CD4 counts, ELISA and Western blotting
- Haematological methods
- Water testing

B. Public health Surveillance

- History of Surveillance
- Concept of Surveillance
- Surveillance of CDs
- Surveillance of NCDs
- Epiinfo
- Developing Surveillance System- I

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3.4 Module 4: Environmental, occupational and urban health (3 Credit)

1. Water
2. Air and air pollution
3. Ventilation-light
4. Radiation-noise
5. Housing
6. Disposal of waste and excreta disposal
7. Occupational health
8. Urban health

3.5 Module 5: Health management Program (4 credits)

- Principles of Management and results based management
- Project management cycle
- Situational analysis - SWOT
- Strategy formulation (formulation of alternatives and selection of a strategy)
- Planning tools: Log frame, PERT, CPM
- Quality assurance in project management
- Activity based implementation plan
- Human aspects of project management like motivating people, team building, Improving personal influence and effectiveness.
- Gender issues in Project Management.
- Monitoring
- MIS
- Evaluating the projects
- Developing action plans for project implementation

Semester 4

4.1-4 Dissertation (15 credits)

Student has to select research question at the end of second semester and should start collecting the data. This has to be submitted at the start of the 4th semester. It will have a clear background of specialized module.

Credits:

MPH will be offered as a two-year full time course. The two-year course is organized into four teaching Semesters.

For mandatory courses, there will be no exam. Credits will be allotted to the students who is having 75% attendance.

Each Semester consists of 15 weeks of teaching. One credit hour is equivalent to 15 hours of teaching.

Students need to complete 80 credits in order to obtain the Masters degree.

3rd semester can be kept as specialization like Nutritional epidemiology, cardiovascular epidemiology, Clinical epidemiology, Genetics epidemiology and Cancer epidemiology, Vaccines in Public health.

60 credits from the MPH (epidemiology) are compulsory. Specialization will involve 15 specialized credits, including 10 credits of dissertation on a topic in the field of specialization and 5 credits for presentation.

Assessment:

Assessment may be in the form of evaluation of long/short written answers, multiple choice questions, presentations, term papers, assignments, viva-voce and practical examination.

50% of assessment is done during term so that there is continuous evaluation of the student, 50% assessment is done at the term end examination.

Examination Pattern:

There should be 4 papers in each semester.

Semester I

Module 1 & 2 should be covered in Paper I. Module III will be covered in paper II. Module 4 will be covered in paper III, Module 5 will be covered in paper IV.

Semester II

Module 1 and 2 should be covered in Paper I. Module III will be covered in paper II. Module IV will be covered in paper III, Module 5 will be covered in paper IV.

Semester III

Module 1 and 2 should be covered in Paper I. Module III will be covered in paper II. Module IV will be covered in paper III, Module 5 will be covered in paper IV.

Semester IV

10 Marks for Dissertation on a topic in the field of specialization and 5 Credits for Presentation.

Paper pattern will be as follows.

Marks distribution:

Section	Type	Marks distribution	Marks allotted per section
Section A	LAQ	$2/3 * 15 = 30$	60
	LAQ	$2/3 * 15 = 30$	
Section B	SAQ	$5/7 * 5 = 25$	25
Practical		25 Marks	25
Total Marks			100

Each paper will have 75 marks for theory and 25 marks for practical.

Resolution No. 4.13 of BOM-55/2018: Resolved as follows:-

- (i) Slow learners must be re-designated as potential learners.
- (ii) Students scoring less than 35% marks in a particular subjects/course in the 1st formative exam are to be listed as potential learners. These learners must be constantly encouraged to perform better with the help of various remedial measures.
- (iii) Students scoring more than 75% marks in a particular subjects/course in the 1st formative exam are to be listed as advanced learners. These learners must be constantly encouraged to participate in various scholarly activities.



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