Revised syllabus.

Master of Public Health

For

School of Public Health

Maa Shakambari University, Saharanpur

Members, Board of Studies (Master of Public health)

S.No.	Name	Subject	College/University	Convenor/Member/ External Expert	Signature
1.	Prof. Garima Jain	Faculty of Science	D.A.V College Muzaffarnagar	Dean Of Science.	
2.	Mr. Rishi pal Singh	Zoology	Lala Kishan Chand Govt. P.G college Gangoh, Saharanpur	Convenor	17/6/25
3.	Prof. Ram Kishan	Statistics	D.A.V College Muzaffarnagar	Member	17/6/25
4.	Prof. Y.P.S. Topal	Sociology	J. V. Jain College Saharanpur	Member	17/6/25
5.	Prof. Sudhir Kumar	Medical Science	Government Medical College Pilakhani, Saharanpur	External Expert.	17/6/25
6.	Dr. Arvind Kumar	Zoology	Government Degree College B.B. Nagar Bulandsehar	External Expert	17.06.2025

School of Public Health

MAA SHAKUMBHARI UNIVERSITY, SAHARANPUR.

This course is aligned with the model curriculum designed by the Ministry of Health and Family Welfare (2017-18)

Mission Of the School.

To emerge among the top institution in India and the world within next ten years through applicability, humanity, implementing and operating dynamic academic, administrative, and functional process, for optimal use of available resources.

While old threats continue to challenge health systems, new issues and challenges have appeared, thereby overburdening the health systems, Creation of a dedicated Public Health Cadre has been identified as one of the important pre-requisites in this direction. Public Health professionals help in bridging the gap between the clinical and managerial aspects of the program implementation and provide techno-managerial inputs. Public Health Programs demand a special emphasis on the study of disease epidemiology, various determinants of health & emerging challenges in health, public policy making and program management.

Cultivate leaders and innovators who have a comprehensive understanding of the business as well as the human aspects of health care to transform the healthcare industry and pursue population health across the country and around the world. Our multidisciplinary and integrated curriculum is tailored to early-career students with diverse academic backgrounds. Graduates will demonstrate knowledge growth, competency development, and practical skills in the management of health focused organizations informed by an understanding of domestic and global public policy.

Vision

To lead, to heal, to serve

To provide affordable quality education, while equipping students with knowledge and skill in their chosen streams, inculcate values, identify hidden talents, provide opportunities for students, to realise their full potentials and thus shape them into future leaders, entrepreneurs and above all a good human being.

ABOUT THE SCHOOL.

The School of Public Health is going to establish with the objective of promoting post-graduate studies and research in Master in Public Health. Public Health is the stream which is strive to inculcate the virtue, core value, threats, and challenge of dynamic, divers' field of research for the betterment of human society all over the world. Life science embarks a relationship between the other stream and is the base of all sciences which are engaging in the developing of healthier society. Therefore, the importance of Master of public health in any curriculum is self-evident. This is the science which attract the students and scholar to provide the best remedies for the development of healthier society by their continuous engagement in research and development of healthcare professional and cadres.

Eligibility Criteria for the Masters in Public Health Program:

Since public health is interconnected and influenced by our surrounding, global institutions have wide eligibility criteria for undertaking the Masters in Public Health (MPH) programs. In the Indian context, we see a very important role for candidates from multiple professional backgrounds within MPH programs. Thereby, the eligibility Criteria for MPH program in in Maa Shakambari Devi University may include both science as well as non-science graduates.

The following are suggested eligibility criteria for the MPH Program.
Graduates in the followings.

- Life science/ Medicine / AYUSH / Dentistry / Veterinary Sciences / Allied and Health Sciences /
- Statistics / Biostatistics / Demography / Population Studies / Nutrition / Sociology / Psychology / Anthropology/ Social Work

Although highly recommended, candidates need not be restricted to the above disciplines and graduates from selected backgrounds other than these, may be taken by the Universities, when considering the overall aptitude and eligibility of a certain candidate.

Duration of the course: This course is designed to be a two years' full time program including internship and dissertation.

About the MPH Course

MPH degree programme is divided into four semesters. The courses in each semester are designed to ensure students acquire identified competencies. The revised MPH curriculum, will be taught with interdisciplinary spirit; integrating knowledge and practice across disciplinary boundaries to address public health challenges.
The curriculum is composed of several core and elective courses, some of which are concentrated in a single semester, whereas other courses like nutrition, social epidemiology, extend in succeeding semesters of MPH study.

Course outline

The MPH course will comprise of 15 Core modules and several elective modules which may be offered by universities depending on their capacity and capability. **Four** elective streams comprising five modules each have been suggested in this document in addition to **15 Core** modules. A candidate will need to pass 15 Core (compulsory) modules, and four(4) elective modules of the chosen stream to successfully complete the program

Teaching and evaluation

MPH and M.Sc. Health Sciences are offered as two-year full-time courses. The two-year course is further organized into four teaching Semesters. Each Semester consists of 15 weeks of teaching. There is at least one assessment for every 4 hours of teaching. Assessment may be in the form of tutorial, test, presentation, term papers, assignments etc. 25% assessment is done during term so that there is continuous evaluation of the student, remaining 75% assessment is done at the term end examination.

A. Core modules.

- Fundamental of public health
- Epidemiology
- Biostatics
- Basic nutrition

- Human biology
- Non communicable and Communicable disease
- Immunology
- Public Health and Nutrition
- Maternal and Child Health Programme
- Environmental and Occupational Health
- Health Economics
- Health Behaviour
- Qualitative and Quantitative Research Method
- Health system management
- Public Health and Disaster Management

B Elective stream.

- Field study of public health Programme
- Population and health
- Health Policies and Planning
- Disability and public health
- Aging and Society
- Urbanization and Health
- Bioethics, Biosafety, and Regulation.
- Global Health Case studies

Note: Institutes may also choose to offer elective modules in other thematic areas such as *Advanced Health Economics and Financing, Advanced Health Informatics, Demography and Population sciences, Advanced Environmental and Occupational health, Global health security and International Policies, Advanced Health Promotions, Human Resources for Health* etc

C. Internship

D. Dissertation

Specific to The Course Content: Successful candidates are expected to demonstrate the following Health settings.

1.Apply the course learning to the public health system and its challenges:

- Demonstrate adequate knowledge and skills to a wide range of public health topics
- Critically conduct the situational analysis and develop action plan for identified public health issues
- Develop workforce for taking public health related responsibilities in defined geographical areas
- Develop an understanding of the epidemiological transitions of programs specific to each State within the country to prioritize public health challenges for policy making

2. Develop, implement, and evaluate key public health policies:

- Develop a capacity to apply conceptual framework to understand policy processes in health care
- Understand roles of supply and demand in policy making in health care
- Develop an understanding to facilitate inter-sectoral coordination and public-private partnership
- Critically analyse resource allocation for competing public health interests across programs Formulate context appropriate policies and design programs to address public health challenges, effectively

3.Develop and demonstrate competency in managing health systems at different level.

- Identify immediate and long-term health program goals at national, State and district levels
- Prioritize health issues in population

- Describe various managerial information systems and their application
- Describe program management plans in health
- Understand and apply core management principles for human resources in health
- Understand and apply program budgeting and economic evaluation
- Understand and apply quality assurance and improvement techniques in health

4. Develop competency in research:

- Understand and apply ethical principles in research, evaluation, and dissemination
- Develop competence to critically evaluate existing information and identify gaps
- Formulate and test research hypotheses in real world scenario
- Translate research knowledge for evidence-based policy making

Syllabus M.Sc. in Public Health (MPH)

(Effective from 2023-24)

(Course Distribution)

Year	Semesters	Course Code	Core/Elective/Value Added	Paper Title	Theory/ Practical/ Project	Credits	Internal Marks	External Marks (Min Marks)	Total Marks	Minimum Marks (INT+EXT)	Teaching Hours Theory + Tutorial	
2 Year Course as per MCI Ist Year	Semester-I		Core Compulsory	Fundamentals of public health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Epidemiology	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Biostatistics	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Basic nutrition	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective course	Field study of public health Program	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
				Population and Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
	Semester II		Core Compulsory	Human Biology	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Non- communicable and Communicable diseases	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Immunology		4	25	75(25)	100	40	3x15=45	2x15=30

			Core compulsory	Public Health & Nutrition	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective Course	Health policy and planning.	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
				Disability and Public Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
		MPH as per NEP2020										
2 Year -Course as Per MCI	**Semester -III**		Core Compulsory	Maternal and Child health and programmes		4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Environmental and occupational Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Health Economics	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Health Behaviour	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective Course	Aging and society.	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
				Urbanization and Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
	Semester -IV		Core Compulsory -	Research Methodology in Public Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory -	Health systems management	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory -	Public health and disaster outbreaks	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective course	Bioethics, biosafety andregulations.	Theory	2	25	75(25)	100	40	3x15=45	2x15=30
				Global Health Case Study	Theory	2	25	75(25)	100	40	3x15=45	2x15=30

			Internship	-------	8	---	----	100	------	------	2 Months.
			Research Submission and Defence of Dissertation .	**VIVA-**	2			25			-

Revised syllabus

For

Master in public Health

SEMESTER - FIRST.		
Programme/Class: M.P.H	**Year:** P.G. First Year	**Semester:** FIRST
Course Code:	**Course Title: Fundamentals of public health**	**Theory**
Explanatory note for semester I		
Semester I Introduce students to the discipline of public health. Students are also exposed to supportive disciplines of public health that is epidemiology and biostatistics. Keydeterminants of health viz human physiology, nutrition, social issues are also discussed.		
Course Objectives:		
• Demonstrate Understanding of Public Health Concepts • Identify Determinants of Health and Disease • Apply Public Health Approaches to Health Problems • Understand the Role of Epidemiology and Biostatistics • Address Public Health Emergencies and Disasters		

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	History of public health: The science and practice of public health, Health and its determinants: Biological,Behavioural, Socio-economic, Cultural, Environmental, Geographical etc, Concept of Primary Health Care: Community Diagnosis & Needs Assessment. Ecology of health, Right to health	15
II	Global health and epidemiological transition, Sources of global health data, Disease, its measures and prevention, Public Health delivery system in India.	15
III	Functional organization of the public health system in India, Evolution of global public health initiatives: primary health care, selective primaryhealth care, MDGs, SDGs.	15
IV	Introduction to National Health Policy – 1983 & 2002, National Population Policy – 2005, National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), National Public Health Programs	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

1 Oxford textbook of Public Health Ed. Roger Detels, James Mcewen, Robert Beaglehole, and Heizo Tanaka Oxford University Press (OUP) 4th Edition: 2002.28

2. Public Health at the Crossroads – Achievements and Prospects. Robert Beaglehole and Ruth Bonita 2nd Edition Cambridge University Press

3. Maxcy-Rosenau-Last Public Health & Preventive Medicine, Fourteenth Edition Ed RobertWallace, MD, et al.

4. Epidemiology and Management for Health Care: Sathe, P.V. Sathe, A.P., PopularPrakashan, Mumbai, 1991.

5. International Public Health: Diseases, Programs, Systems, and Policies by MichaelMerson, Robert E Black, Anne J Mills - Jones and Bartlett Publishers.

6. Preventive and Social Medicine, K Park, Bansaridas Bhanot Publishing House.

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

course Code	**Course Title. Epidemiology**	Theory
Course objective To familiarize students on science and methods of epidemiology, To understand the applications of epidemiology in public health decision making.		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Historical aspects, definition, aim and uses, Descriptive Epidemiology, Social Epidemiology- Definition, History, Aims, Basic principles & Methods	**12**
II	Risk measurement, Measurement of morbidity and mortality: Incidence, Prevalence, Age-adjustment and survival analysis, use of morbidity and mortality	**15**
III	Epidemiological study designs, Bias, confounding and interaction, Causal association Disease Surveillance. Case study of disease.	**15**
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Gordis Leon. Epidemiology (Fifth edition) , Elsevier Saunders, 2013.
Dona Schneider and David E. Lilienfeld. Lilienfeld's Foundations of Epidemiology, FourthEdition, Oxford University Press, USA, 2015.
Porta Miquel. A Dictionary of Epidemiology, Oxford University Press, USA, 2014
Somerville Margaret, et al., Public Health and Epidemiology at a Glance, Second Edition,Wiley-Blackwell, 2016
Beaglehole. R. Bonita, et. al Basic Epidemiology, 2nd Edition, WHO Publication, Geneva,2006.
Spassoff R.A. Epidemiologic Methods for Health Policy, Oxford University Press, 1999
Barkar, D.J.P., Practical Epidemiology: Churchill pub, Livingstone, 1991.
Knox E. G. Epidemiology in health care planning: A Guide to the Uses of a ScientificMethod, Oxford University Press, USA.

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course Code	Course Title. Biostatistics.	Theory
Course Objectives: To introduce students to the use of bio-statistics in health sciences To understand the role of biostatistics as a supportive discipline of epidemiology		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Introduction to biostatistics: Descriptive and Inductive statistics, Describing data: Variables: Nominal, Ordinal and Interval scale variables. Measures of central tendency: Mean (arithmetic, geometric, harmonic) Median, Mode; Merits anddemerits of different measures. Measures of dispersion: Range, Quartile deviation, Mean deviation, Standard Deviation, Variance; Merits and demerits of different measures of dispersion. Measures of Skewness and Kurtosis; Graphical presentation of data. Correlation: Concept of correlation, Pearson correlation coefficient, and its properties; Spearman ranks correlation coefficient.	15
II	Introduction to the concept of probability, events; exhaustive, mutually exclusive events; laws of probability, additive and multiplicative laws of probability and their properties, Discrete probability distributions: Binomial distribution and Poisson distribution and their properties. Continuous probability distribution: Introduction tonormal distribution and its properties.	15
III	Sampling methods: Population, Sample, Parameter, and Statistic, Type of sampling, Probability sampling, Non-probability sampling, Simple random sampling with and without replacement, sample size determination, Stratified random sampling.	15

IV	Test of Significance: Concepts in Inductive statistics: Sampling distribution of mean, Standard error. Statistical hypothesis, critical egion, level of significance, and two types of errors. t-test for small samples and tests based on normal distributionfor large samples. Chi-square goodness of fit, Testing the association of attributes, Nonparametric tests: Sign test, Wilcoxon signed rank test, Run test, K-S test, Linear regression, Multiple linear regressions, Survey methods - quantitative and qualitative survey methods in medical & public health sciences. Working with data: Computing variables, recoding variables, sorting data, grouping data, ensuring quality of data, Introduction to statistical software. one way ANOVA and two-way ANOVA, R-Software, SPSS, etc.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Statistics for Social sciences: T. Rajaretna RRm, Sage publication. New Delhi 2016

Fundamentals of Statistics (Seventh Edition): S.G. Gupta. Himalaya Publication,Mumbai. 2017

Introduction to Biostatistics and Research Methods(Fifth Edition): P.S.S. Sundar Rao,

J. Richard, Prentice Hall, New Delhi, 2012

An Introduction to Biostatistics: A manual for students in Health Sciences: P.S.S.Sundar Rao, J. Richard Prentice Hall, New Delhi, 1996

Bio-Statistics: A foundation for Analysis in the Health Sciences: Daniel, W.W., JohnWiley and Sons Pub., Canada, 1991.

Bio-Statistics: A Manual of statistical methods for use in the Health, Nutrition andAnthropology: K. Vishwas Rao, Jaypee Brothers Medical Pub., New Delhi, 1996

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course Code.	Course Title. Basic Nutrition	Theory
Course Objectives: To familiarize students to the fundamentals of population studies and its links withhealth To impart practical knowledge and skills of demographic and health data sources andpractical use of data		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction to nutrition, inter-relationship between food, nutrients & health. Nutritional Status. Common terms related to nutrition., Energy: Introduction, Physiological fuel value,. Basal Metabolic Rate, Total EnergyExpenditure, Specific dynamic action, Respiratory Quotient, Carbohydrates: Classification, function, sources, RDA & deficiency	**15**
II	Carbohydrates: Classification, function, sources, RDA & deficiency, Fibre – types, role in health and diseases. Lipids: Classification of fatty acids, Function, sources, RDA, & deficiency. Saturated fat, MUFA,	**15**

	PUFA, essential fatty acids, prostaglandins. Cholesterol – introduction, sources, requirement.	
III	Proteins: Classification of amino acids. (essential & non- essential), functions of protein, sources, RDA & Deficiency. Evaluation of the protein quality – biological value, protein efficiency ratio, nitrogen retention, net protein utilization. Vitamins: Classification – Fat soluble & water soluble, function, sources, RDA &deficiency	15
IV	Minerals: Major minerals – Ca, P, Mg, Na, K. Minor minerals – Fe, I, F, Zn, Co, Mn,Se, S, Cr., Function, sources, RDA & deficiency. Water: Role of water in the body, its requirement, extracellular & intracellular fluid,maintenance of water balance	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		
Suggested Readings: **Mann, J. and Truswell, S. eds., 2017**. Essentials of human nutrition. Oxford UniversityPress **Eastwood, M.A., 2013.** Principles of human nutrition. Springer. **Bender, D., 2014.** An introduction to nutrition and metabolism. CRC Press		
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.		

Course Code	Course Title. Field Study OF public Health Programme	Theory

Course Objectives

1. Understand the structure and functioning of public health systems.
2. Identify key health issues in a community.
3. Apply data collection tools and methods in the field.
4. Analyse public health interventions in real-world settings.
5. Communicate findings through presentations and written reports.

Credits: 4	Course Minor elective	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	Functional organization of the public health system, Infectious disease control programmes and policies.	10
II	Reproductive, maternal and child health services Water sanitation programme and nutritional interventions. Adolescent health initiative. Environmental and occupational health.	15
	Purpose and importance of fieldwork in public health.	15

III	Ethical considerations and research protocols. Planning for fieldwork: tools, design, logistics. Scheduled field visits to local health facilities or communities. Daily logbooks and group discussions. Preparation of field reports.	
IV	Overview of primary, secondary, and tertiary health care systems. Visit to public hospitals, PHCs, CHCs, NGOs. Health workforce roles and intersectoral collaboration. Household surveys, key informant interviews. Participatory rural appraisal (PRA) methods. Health mapping and use of GIS.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Class handouts.

Park's Textbook of Preventive and Social Medicine by K. Park Banarsidas Bhanot publishers revised edition.

Introduction to Public Health by Mary-Jane Schneider, Jones and Bartlettt learning Publisher.

Essentials of Public Health by Bernard J. Turnock, Jones and Bartlettt learning Publisher.

Field Research in Public Health by Gillian Elinor

Rural health care system in India, Ministry of Health and Family Welfare, Government of India Common Review Mission Reports (1st to 10th), National Health Mission, Governmentof India Joint Monitoring Mission Reports, World Health Organization, World Bank andGovernment of India **Evaluation Reports** – International and National
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.

Course Code	Course Title. Population and Health	Theory
Course Objectives To familiarize students to the fundamentals of population studies and its links with health To impart practical knowledge and skills of demographic and health data sources and practical use of data		
Credits: 4	**Course Elective**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Introduction to population and health: definition, scope, Concept of demography, Population components, Demographic transition theory , Sources of demographic and Health data : Population census, Vital registration system, Sample Registration System, National Family Health Survey (NFHS), District Level Health Survey (DLHS), Annual Health Survey (AHS), National Sample Survey Organization (NSSO), Demonstration of the practical use of the data and its advantages and limitations.	20
II	Population composition: Levels and trends in the sex and age structure of the population of world, developed and developing countries. Concepts, definition, determinants and measurement of fertility, mortality and migration, population projection.	15
III	Life tables: Concept, importance, and methods. Population policy: Population policy linkages with health issues.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

1. The Springer Series on Demographic Methods and Population Analysis: Ed.: Land, Kenneth C. "The Plenum Series on Demographic Methods and Population Analysis" Durham, NC 27708-0088, USA , 2014
2. Population Studies and Development from Theory to Fieldwork: Petit, Véronique (Ed.) Springer International Publication AG 2018
3. Handbook of Population: Ed. Dudley Poston and Michael Micklin. Springer publication, Edition one, 2006
4. Principles of population Studies: Asha Bhende and Tara Kanitkar, Himalaya Pub, Houses, Mumbai, 2011
5. The methods and Materials of Demography (Second edition): Siegel, Jacob S., and David A. Swanson,: Elsevier Academic Press, San Diego, 2004

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Explanatory note for semester II

The objective of semester II is to expose students to the basic Human biology, None communicable and communicable disease and its etiology, Immunological response of the body, Public health And Nutrition its impact and assessment, Health policy and planning. And the role of government and non-government. organizations.

Course Objectives:

To provide an understanding about the structure and function of the human body, and physiological aspects of the organ systems.

Course code.	Course title. **Human Biology.**	Theory
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Cell's structure and function, type of cells, different type of cell Organelles, Cell membrane structure and function. Different type of tissues, Structure of D.N.A and its replication. Structure of R.N.A and types,	15
II	Human life cycle: growth and development, sexuality and conception, puberty and adolescent health, hormonal impact on adulthood.	15
III	Human Anatomy and physiology: Structure and function of organ systems; Musculo-skeletal, Cardiovascular, Respiratory, Digestive, Urino-genital system, Endocrine Systems,	15
IV	Homeostasis, lymphatic, Nervous system, and Sense organs. Blood its composition and functions blood groups, Rh Factor, blood coagulation.	10

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Textbook of Medical Physiology : A. C. Guyton, Prism Books Pvt. Ltd., Bangalore,
Anatomy and Physiology for Nurses : R.S. Winwood, J.L. Smith, Education Academicand Medicinal Publishing Division of Hodder and Stoughton, London,
Atlas of Anatomy : Casey Horton, Marshall Cavendish Books, London,
Basic Clinical Physiology : J.H. Green , Oxford University press, Delhi
Samson Wright's Applied Physiology : Keele, Neil, *et.al.* (Ed) Oxford University press,Delhi

Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.		
Course code	Title ..**Non communicable and communicable disease**	Theory

Course Objectives:

- To understand the biology of pathogens and the mechanism of action of antibioticsand antivirals
- To understand the pathology, pathogenesis, clinical manifestation, mode of transmission, prevention and control of diseases of bacterial and viral etiology
- To understand the principles of infectious disease control programs
- To orient students about the national disease control programs,
- Critical evaluation of various disease control programs

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	General overview of infectious diseases and their impact in developing countries. Epidemiology of infectious diseases, Recognize the risk factor approach to prevent non-communicable diseases,	15
II	Structure of prokaryotic cell, pathogenic modifications Anti-microbial agents, drug resistance , Comprehend the Population based/public health approaches to prevention of common NCD risk factors (physical inactivity, tobacco	15

	and unhealthy diet) Familiarize with the current projects on targeting the prevention of NCDs, including, innovations in prevention.	
III	Infectious disease control programmes (including agent biology, epidemiology, pathogenesis and pathology, clinical presentation, and management; public healthstrategies and mechanisms) Incubation periods,Epidemic patterns, Modes of transmission, Transmission dynamics, Measures of infectiousness Secondary, attack, rates, Vaccine preventable diseases: , polio, diphtheria, tetanus, measles. Respiratory diseases: Tuberculosis, leprosy,	15
IV	Contact: STD s and AIDS, hepatitis. Vector borne: Malaria and filaria, dengue, leptospirosis, Zoonotic: plague and rabies. Neglected tropical diseases, Hypertension, Diabetes mellitus, Cancers, Mental health, Stroke, Burns/trauma/ accidents etc.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Duguid et al. Textbook of Medical microbiology
Javetz and Melnick: Adelberg's Medical Microbiology
World Health Organization: Report on infectious diseases, and Report on Multidrugresistance, World Health Organization, Geneva
Principles and Practice of Medicine: Davidson, Edward, Bouchier et. Al., PearsonProfessional Ltd. London
Biology of Disease: Jonathan Phillips, Paul Murray, Blackwell Science Ltd. Australia,
Human Virology: A textbook of Students of Medicine and Microbiology, Dentistry,Leslie collier, John Oxford, Oxford University Press, Tokyo
Textbook of Medicine: Cecil, Bennett, et al., Harcourt Brace Joanvich Inc. U.S.A.
Nelson K E : Infectious disease epidemiology: theory and practice
Griesecke J : Modern infectious disease epidemiology
National Disease Control Programmes websites and class handouts

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title : **Immunology**	**Theory**
Course Objectives: • To provide a basic knowledge of the immune response and its involvement in health and disease, basic components of immune system . • Antigen and antibody reaction. And immunization program.		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction, basic concepts in immunology, components of the immune system Innate immunity: Different lines and layers of defence, The complement system .	**15**
II	Adaptive immunity- humoral and cell mediated: The structure of a typical antibody molecule, Interaction between the antibody and specific antigen; Antigen processing andpresentation	**15**
III	Cytokines and immunomodulation Hypersensitivity and allergy.	**7**
IV	Vaccines and Vaccination: immunology of selected infectious diseases of public health importance	**15**

	Applications of immunology in diagnosis and management of common diseases	

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Essential Immunology: - Ivan Roitt, Blackwell scientific publications, LondonEdinburgh Boston, Australia, 1997.
Immunology: Janis Kuby, W.H. Freeman and company, U.S.A.1992
Immunobiology: The immune system in health and disease: J. Travers, currentbiology pub, New York, 1997.
Vaccines Prospects and perspectives: Harmindar Sing, Rajesh Bhatia, Forward pub.Co., Delhi, 1993
Relevant documents and Suggested texts therein from the WHO website
WHO Technical Publications: Vaccines, Human Genetics Program series.
Harrison's Principles of Internal Medicine 16th Ed.-2005

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	**Title... Public health and nutrition**	**Theory**

Course objective.

- To understand the basics of nutrition, its components. And nutrition deficiencies burden.
- To identify public health nutrition interventions
- To study the impact of nutritional policies and programmes and nutritional status of the population

Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	Introduction to public health nutrition, Nutrition Transition: Demographic, economic transition, poverty alleviation, foodconsumption patterns	15
II	Undernutrition: global and Indian prevalence of undernutrition, risk factors consequences, Micronutrient deficiency disorders: prevalence, risk factors, Interventions that worked globally, lessons learnt	15
III	Overnutrition: Evolutionary principle, Obesity: diabetes, prevalence, and risk factors: Physical activity and inactivity, screening of those at nutritional risk, Life style diseases: Interventions that worked globally, lessons learnt.	15
IV	Guidelines for prevention of non- communicable diseases, Food Security: Factors affecting food security, economics food security andcommunity development, Food security bill.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Vir S.C., (2015), Public health nutrition in developing countries (Part I and II), Woodhead Publishing India Pvt, Ltd.

WHO and Chan, M., (2011) 'Haemoglobin concentrations for the diagnosis of anemiaand assessment of severity', Geneva, Switzerland: World Health Organization, Geneva pp. 1–6.

Cashman, K. D., Sheehy, T., & O'Neill, C. M. (2018). Is vitamin D deficiency a publichealth concern for low middle income countries? A systematic literature review. European journal of nutrition, 1-21

Suggested Continuous Evaluation Methods: Continuous internal evaluation throughinternal tests, quizzes and Presentation.

Course code	Title. Health policy and planning.	Theory
Course objective. • To understand health systems and health policy making processes • To understand the health planning from the perspective of national and globaldevelopments concerning health sector		
Credits: 4	**Elective**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Health systems – goals, elements and characteristics, multi-levels of operations, interactions and interrelationships, Health systems frameworks: six building blocks of health systems – Governance, Financing, Human resource	15
II	Overview of the health system in India, human resource, Health system development and strengthening, Health Policy and analysis – policy actors, focus and forms of policy analysis – policy analysis triangle	15

III	Definition of Planning, Health Planning Models History of Planning in India. National Health Programs ▪ Integrated Child Development Scheme ▪ RNTCP ▪ NACO ▪ RCH ▪ NHM: NRHM & NUHM ▪ NVBDCP ▪ IDSP ▪ NIDDCP ▪ NLEP ▪ NPCB ▪ Pulse Polio Immunization Program ▪ National Mental Health Program ▪ National Cancer Control Program ▪ National Program for Prevention and Control of Diabetes, Cardio-vascular diseases and stroke ▪ INAP	15
IV	Development of National Health Policy: Evolution of Indian National Health Policies 1981-83, 2001 and 2017, Global agendas: Health for all- Millennium Development Goals- Sustainable Development Goals Primary Health Care - Universal health coverage	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:
National Health and Research Policy Documents Expert Committee Report on Public Health Systems in India 1996 Collins, C., Green, A., 2014. Valuing Health Systems: A Framework for Low and Middle-Income Countries. SAGE Publications. Gupta, R.P., 2016. Health Care Reforms in India: Making Up for the Lost Decades. Elsevier India. De Savigny, D., Adam, T., Policy, A. for H., Research, S., Organization, W.H., 2009. Systems Thinking for Health Systems Strengthening, Alliance Flagship report series. Alliance for Health Policy and Systems Research. Gilson, L., Alliance for Health Policy and Systems Research, World Health Organization,2012. Health policy and systems research: a methodology reader
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title : DISABILITY AND PUBLIC HEALTH	Theory
Course objective. • To introduce students to disability as a public health issue • To identify needs of the disabled and find ways to address the issues that the disabled face in developing countries		
Credits: 4	**Elective Course**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Defining disability: evolving concept of disability, medical model, social model, and human rights perspective of disability Disability and public health: Issues, definition, and ethics.	15
II	Data sources and estimating disability: global and national level data sources, trends in developed and developing countries, epidemiological data on disability Determinants of disability: preventable disability, developing preventative strategies for avoidable disabling conditions,	15
III	Health and social care needs of disabled: health care needs of disabled, accessibility, availability, and affordability of health services for disabled, approach to comprehensive, integrated care for disabled, role of public health .	15
IV	Social and psychological experience of disability, stigma and discrimination faced by affected individuals, identification of care needs, role of psycho-social support, approach to comprehensive, integrated care for disabled Public health implications of disability: overview of policy, programmes, innovation, interventions, rehabilitation, reablement.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

1. Drum C.E. Krahn G.L., Hank Bersani Jr. Disability and Public Health. Washington, USA: American Public Health Association. Washington USA. 2016 Print ISSN: 0090-0036 | Electronic ISSN: 1541-0048
2. Lollar D.J, Anderson, ElenaM (eds) Public Health Perspectives on Disability: Epidemiology to Ethics and Beyond. USA: Springer Publication, 2011. ISBN 978-1-4419-73412
3. Berghs M, Atkin K, Graham H, Hatton C, Thomas C. Implications for public health research of models and theories of disability: a scoping study and evidence synthesis. Published by Public Health Res div of National Institute for Health research. 2016.
4. Beyrer C, and Pizer HF, (eds). Public health and human rights; evidence-based approaches. Baltimore, MD: The Johns Hopkins University Press, 2007.
5. Jean O'Hara Jane McCarthy Nick Bouras. Intellectual Disability and Ill Health - A Review of the Evidence . Cambridge University Press India Pvt Ltd, 2010. ISBN: 9780521728898, 0521728894

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Explanatory note for semester III

This semester will give insights about the maternal and child health. morbidity and mortality, rate in India and other countries. This will also discuss about the safety and measures of the pregnancies its complication and child health issues. nutrition methods and techniques, parameters of the nutrition and nutrition deficiency disorders, socio- psychological issues of ageing. Health and its economics, national and international index of health. Health behaviours.

Course code	Title: Maternal and Child Health Programs	Theory

Course Objectives:

- To introduce students to the essential components of maternal and child health andhealth care programme
- To discuss global and national maternal and child morbidity and mortality trends itsimportant interventions to responsible for the change in trends

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	**Women's & maternal Health** Burden of reproductive ill-health: unintended pregnancies, unsafe abortions, MTP act, Non-sexually transmitted infections, infertility, Violence against women, Evolution of the concept of reproductive health and its implications, early human development and public health implications, Gametogenesis, fertilization, implantation, Foetal development, Preconception period , maternal and paternal risk factors for maternal and	15

	foetal outcomes , Developmental origins of adult diseases.	
II	Antepartum – antenatal care and significance, physiological changes during pregnancy, complications of pregnancy, high risk pregnancy, Intrapartum- stages of labour and delivery, components of labour, danger sign and management of labour complications of labour and delivery, Postpartum – care, complications of postpartum, Maternal morbidity and mortality; levels and causes of maternal mortality, Contraception, sterilization, population control	15
III	**Child Health:** Levels and trends in child mortality, major causes of neonatal, infant and childmortality and public health interventions, Major causes of neonatal mortality; Preterm births, low birth weight and publichealth interventions; birth defects, Common morbidities among young children; lower respiratory tract infections,diarrhoea,	15
IV	Immunization; coverage, factors, Infancy and child hood : Growth and development; physical, motor, cognitive, psycho-social and language development.	15

	Child nutrition, Policy and programmes: the main national and international interventions for prevention of reproductive and childhood/adolescent morbidity and mortality, including RMNCHA+, JSSK, RBSK, IYCF, IMNCI, Maternity benefit schemes.	

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Kotch Jonathan B. Maternal and Child Health: Programs, Problems, and Policy in Public Health 3rd Edition Jones & Bartlett Learning; 3 edition (May 11, 2012) ISBN-13: 978-1449611590

Ehiri John(Ed.) Maternal and child health: Global challenges, programes and policies .Springer-Verlag US 2009

Dutta D C. Textbook of Obstetrics: Including Perinatology and Contraception. JaypeeBrothers Medical Publisher Ltd. New Delhi . 8th Edition 2016

Dutta D C Textbook of Gynecology . JAYPEE BROTHERS MEDICAL PUBLISHERS (P)LTD New Delhi 6th edition 2013

Behrman RE and Kliegman R. Nelson's textbook of pediatrics. Elsevier IncPublication 2016 ISBN: 978-1-4557-7566-8

Ghai O P. Essentials of Pediatrics. CBS Publications and Distributions Pvt Ltd. NewDelhi 8th Edition 2013

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title: **Environmental and Occupational health**	Theory
Course Objectives: This course explores the impact of environmental and occupational factors on human health. It addresses the identification, assessment, and mitigation of hazards in the environment and workplace, with an emphasis on policy, regulation, and preventive strategies.		
Credits: 4	**Core Compulsory**	**Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Principles of environment health and human ecology Food sanitation and safety, Vector and rodent control, Theories and history of environmental health Environmental health policy and legal mechanisms in a National and, international context, Ecosystems in various settings (linking the built environment, transport, housing and green space to human health), Environmental pollutions, waste disposal and treatment	15
III	Workplace safety: Prevention of occupational hazards (including accident prevention) Legislations related to occupational health, Employees State Insurance Scheme, Government, and other schemes for working population in India	15

III	Management of environmental hazards, natural disasters, Central Pollution Control Board (CPCB) Guidelines, Environmental health impact, assessment. Climate Change & Health, Biomedical Waste Management	15
IV	Indoor and outdoor air pollution, Occupational respiratory risks, non-ionizing and ionizing radiation, Noise exposure in work settings, Displacement and mental health, Disparities in exposure and health outcomes, Community-level risk assessment, green jobs and sustainability.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Occupational Health: Management and Practice for Health Practitioners By S. P. Hattingh, 3rd edition.

Urban Health: Global Perspectives edited by David Vlahov, Jo Ivey Boufford, Clarence E. Pearson, Laurie Norris, published by Jossey bass

Industrial Health Jack E. Peterson American Conference of Governmental Industrial Hygienists, 1991

Environmental and Health Impact Assessment of Development Projects: A edited by Robert G. H. Turnbull, Elsevier Sciences Publication

Environmental Chemistry, B.K.Sharma, Krishna Prakashan Media.

Environmental Science by S C Santra, Publisher: : New Central Book Agency Calcutta, 2001

Perspectives in Environmental Health -Vector and Water Borne Diseases Mukhopadhyay Aniruddha, De A K

Sociology Anthropology, and Development, Michael M. Cernea, The World Bank Washington, D.C, 1994

Development and the Environment, Lewis T. Preston, The World Bank Washington, D.C, 1992

Course code	Title: Health Economics	Theory
Course Objectives: • To impart knowledge on health care financing health economics including cost- benefit and cost-utility analysis		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		

Unit	Course Topic	No. of Lectures Hours
I	Health financing, budgeting, and economics. Market model, market failure, and the roles and limitations of markets in health care,	10
II	Overview on Health financing in Developing countries Health financing concepts such as cost and cost classification, Concepts of efficiency, effectiveness, equity, elasticity of demand, costing, production, marginal cost analysis, and opportunity cost	15
III	Budget management, Cost-effective analysis, Cost-benefit analysis, and Cost-Utility analysis;	7

IV	Economic analysis reporting for projects Health insurance in India: Private insurance, community-based insurance schemes, Universal health coverage and role of health care financing.	10

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Essentials of Health Economics: Diane M. Dewar, series editor: Richard Rigelman, United states, 2010

Health Economics: Peter Zweifel and Friedrich Breyer, Oxford University Press, New York, 1997

Health Program planning and evaluation A practical, Systematic approach for community Health; L. Michele Issel Jones and Bartlett Publishers, Canada,2009

Health economics, an International Perspective; Barbara Mcpake, Lilani Kumaranayake and Charles Normand, Routledge, Taylor & Francis Group, New York, 2006

Health Economics in India (Edited), Prashant Panda and Himanshu Rout, New CenturyPubns, 2007

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Further Suggestions:

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Course code	Title. Health Behaviour.	Theory
Course objective. • To introduce students to the factors affecting on health and illness behavior ofpopulation, and methods of behavioral modifications		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction to health behavior research; attitude, behavior, perception, risk, self-efficacy etc. and how these concepts used in prevention and health promotion program. Introduction to health behavior theories and models: Health Belief Model, Transtheoretical model, Theory of Reasoned Action and Planned Behavior	**15**
II	Behavior change communication: Adherence and Resistance, Motivation and behavior change, illness, diseases and behavior change, social and psychological factors contributing to long-term behavioral change, Health education : methods of health education interventions, ways of communication,and assessment of impact of health education	**15**

III	Health promotion and disease prevention : Lay Representations of illness, social andpsychological factors involved in the illness experience , Stress and illness: Stress and Coping, role of social support in stress, coping and health outcome .Substance use and psychological intervention ,Pain and chronic illness, Methods to measure behavioral change : scale development and validation of a scale by taking examples from existing research, when to use scale , analysis of data gathered using scale;	15
IV	Cultural Epidemiology Framework and respective domains: Cultural identity (Domain I),Illness Explanatory Model (Domain II), key social interpersonal relations (Domain III) and relevant societal structural features of the health systems acknowledging the potential impact of social status and political economy (Domain IV)	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Marks D, Murray M, Brian Evans, Estacio EV, Health Psychology.Delhi: sagepublication, 2011

McDowell Ian, Measuring Health : A guide to relating scales and questionnaires. NewYork: Oxford University Press, 2006.

Scott Kahan, Andrea C. Gielen, Peter J. Fagan, Lawrence W. (eds)Green HealthBehavior Change in Populations. USA: JHU Press, 09-Oct-2014

Karen Glanz, Barbara Rimer and K. Viswanath (eds) Health Behaviour : TheoryResearch and Practice. Jossey-Bass, July 2015

Prestwich,A. Jared Kenworthy , Mark Conner Health Behavior Change: Theories,Methods and Interventions. London and **Newyork: Routledge,** 6 October 2017, ISBN-13: 978-1138694811

Baranowski, T., Perry, C.L., Parcel, G.S. 2002. How Individuals, Environments, andHealth Behavior Interact. In: Glanz, **K., Rimer,**

B.K., Lewis, F.M., editors. Health Behavior and Health Education: Theory, Research, and Practice. 3rd Edition. **San Francisco, CA**: Jossey-Bass. p. 165-184.

Gitlin L., Sara Czaja. Behavioral Intervention Research: Designing, Evaluating, and Implementing . New York: Springer Publishing Company , 2015 ISBN
13 9780826126580

Weiss, M. G., (2017). The promise of cultural epidemiology. Taiwanese Journal of Psychiatry, 31(1), 8–24.

Weiss M. G. (2018). Cultural Epidemiology: Conceptual framework and current directions of an interdisciplinary field. Bulletin of the Institute of Ethnography SASA

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title. Ageing and Society.	Theory

Course Objectives:

1. To provide an overview of demographic, social, psychological and health issues related to population ageing

2.To expose students to the health status of older adults, disease and disability burden andchallenges to public health due to population ageing

Credits: 4	**Elective**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Demographic trends and epidemiological description of the major health problems and issues for older populations, and their implications for public health, Theories of ageing and biology of ageing : Identify the components of usual versus successful aging, behavioral, social and environmental factors that influence successful ageing	15
II	Chronic conditions and Disability in older adults: their implications for public health, functional decline, Fall prevention Nutrition of older adults : frailty , obesity in older adults, Health care services for older adults: strategies to prevent diseases and promote health in elderly. Dementia, Alzheimer's, and other mental health conditions in older adults: Its implications for families and society, Alzheimer's Disease and Caregiving	15
III	Socio-cultural change and social care needs of older adults: Historical shifts in position, family care giving, current social care giving needs of ageing adults, End of life care	15
IV	Policy and Programme for welfare of older adults : Policies and programs from India and around the world that support healthy ageing will be examined.	10
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Prohaska, T.R. Lynda A. Anderson, Robert H. Binstoc, Public Health for anAging Society. USA: JHU Press.
Whitbourne S.K. Adult development and ageing. Biopsychosocial perspectivesJohn Wiley & sons.
Hofer S.M. Duane F Alwin. Ian Stuart Hamilton .An introduction togerontology. UK: Cambridge University Press.
Scott M. 2008. Handbook of cognitive ageing. Interdisciplinary perspectives. USA:Sage publications
Cox, H.G.,& Kahana, E.(2013).*Aging and Human Development (10th ed.)*
Moody, H. R., & Sasser, J. R. Aging: Concepts and Controversies (9th ed.)
Binstock, R. H., & George, L. K. (Eds.). Handbook of Aging and the Social Sciences.

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title. Urbanization and Health	Theory
Course Objectives: To impart knowledge on the determinants of urban health, health care in urban areas, health of vulnerable sections in cities		
Credits: 4	**Elective**	**Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Urban population: urban demography, epidemiology, changes in urban physical and social environment and their consequences for health, Urban' as determinant of health: defining health disparities and health equity; the determinants of urban health; locating and understanding health disparities using data, housing, segregation, built environment, food insecurity, violence, and crime,	15
II	Urbanization and health outcome : Emerging public health issues associated with rapid growth of urban population overcoming health inequities in urban settings. Health services in urban areas: health services in urban areas, public health care access and other issues, inadequacy of public health services,	15
III	Health issues of the vulnerable population in urban areas Urban .Health planning: design and implementation of cost-effective health care system	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Galea Sandro, David Vlahov. Handbook of urban health. Populations, methods and practice. USA: Springer publication 2008

Cecilia Tacoli Urbanization, gender and urban poverty: paid work and unpaid carework in the city, Published by UNFPA , March 2012

World Health Organization. Hidden cities: unmasking and overcoming health inequities in urban settings. WHO and United Nations Human Settlements Programme. 2010.ISBN 978 92 4 154803 8 (WHO)

Umar Benna, Urbanization, and its impact on socio-economic growth in developing regions. Published by IGI Global. 2017

The Centre on Housing Rights and Evictions (COHRE), Women, Slums and Urbanisation: Examining the Causes and Consequences. Published by COHRE, Geneva, Switzerland 2008. ISBN: 978-92-95004-42-9.

Peter Ellis and Mark Roberts. Leveraging Urbanization in South Asia Managing Spatial Transformation for Prosperity and Livability. Published by World Bank Group. Washington 2016. ISBN (paper): 978-1-4648-0662-9 ISBN (electronic): 978-1-4648-0663-6 DOI: 10.1596/978-1-4648-0662-9

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Explanatory note for semester IV

Semester IV provides students with an insight into the research methodology, managerial and administrative modalities of health service, imparts knowledge on public health emergencies and disastermanagements. It also exposes students to the Health System Management, Public health and disaster management, Environmental effect on occupational health. Students are also introduced to the basic concepts in health economics, bioethics and biosafety

Course code	Title: **Qualitative and Quantitative Research Methods.**	Theory

Course Objectives:

- To introduce students to quantitative research methods in public health includingissues of ethics and biosafety
- To train students in the method of analysis of data and report writing. The information from this course will be subsequently used for planning healthinterventions

Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	Introduction to Research- Definition, Types, Strategies & Designs Research Process and Cycle. Descriptive/epidemiological studies–Cross sectional, Operational Research and correlation studies. Analytical Studies-Case control study, Cohort study .	20

	Experimental Studies- Quasi-Experimental Studies & Clinical trials- Introduction to various types and its application, Types of research; steps in conducting research Ethics in research Survey methods and their application to public health research.	
II	Research Methods -Qualitative (Development of conceptual framework, - Qualitative methods: FGDs, in-depth interviews, ethnographies, participatory methods, participant observation etc. Data collection, recording) & Quantitative. Statistical Methods in Public Health Research-Application and Interpretation Survey design and planning, sampling, construction of questionnaire, Data collection, analysis, Report writing. Use of software in research. Application of AI tools in research.	20
	Research Data Collection Tools & Methods-Sampling and survey methods, Sample size, Survey design & Planning, Interview schedule, questionnaire construction, validation etc, Research Data Collection, Management, Coding, procedures Participatory Research and Analysis (PRA), Methods Ethical Aspects in health research. Research paper/Proposal-Formulation, writing & critical review. Bibliography-Review of literature and bibliography	20

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc
Suggested Readings: Health Research Methodology: A guide for training in research methods. SecondEdition. WHO, 2001. Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New AgeInternational. 418p. John Creswell (2013). Research Design: Qualitative, Quantitative, and mixed methods. approaches. Fourth edition, Sage Publications. ICMR, 2016 Ethical Guidelines for Biomedical Research on Human Participants, ICMR,New Delhi Health Research Methods – A Guide for Training in Research Methods, World Health Organization, Manila, 2001 Research Methodology by A.P. Kulkarni Power Publication, Calcutta . Research Methods by Ranjit Kumar. Research Methods by Good & Hatt. Research Methods by P. V. Young. Research Methods by Media research methods by Barrie Gunter.
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title Health System Management	Theory
Course Objectives: • To familiarize students with the challenges of management of health care system inIndia • To familiarize students with the principles and techniques of management		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		

Unit	Course Topic	No. of Lectures Hours
I	Basic knowledge of health care systems and the environment in which health care managers and providers function. Health Programmes: planning, implementation, Monitoring and Evaluation Components of strategic management, Project management.	15
II	Behavioural aspects of governmental, faith based and other non – governmental organizations, Introduction to logistics management, Introduction to human resource management	15
III	Health management information system (HMIS) : health information sources, challenges in HMIS, advantages and lacunas in current system, recommendations to improve utilizationof current HMIS. Brief overview of evolution of management theories and tools and techniques used in HMIS.	15
IV	Quality: define quality, its importance in public health, measures to manage and improve equality, Introduction to Operational Research, Risk management, Public	15

	Health Leadership. Strategic management in Public Health, Organization Behaviour and Design. Human Resource Development Quality &Assurance. Management Information and Evaluation System. Health resources & Management, Total Quality Management & ISO certification of health systems	

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Fallon L F., Eric J Zgodzinski. Public health management. Sundbury, MA: Jones andBarlett.2009.

Lieber J.G. , C. McConnel. Management principles for health professionals. Sundbury,MA: Jones and Barlett. 2010.

Buchbinder, SB, n.H.Shanks. Introduction to health care management. Sundbury,MA: Jones and Barlett. 2007.

Fallon L F., C.McConnell. Human Resource Management in Health care .Sundbury,MA: Jones and Barlett. 2007

Health Care Administration: Planning, Implementing, and Managing Organized Delivery,Systems, Third Edition, by Lawrence Wolper, Jones and Bartlet Publishers International, UK.

Essentials of Public Health Management by L. Fleming Fallon Jr., Eric Zgodzinski, Jones & ,Bartlett Publishers,2011

Health Management by Preeti Oberoi, Sarup & Sons publication

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title. Public Health and Disaster Outbreaks	Theory

Course Objectives:

- To introduce students about the public health disaster management. Psychological impact of disaster on society. And disease outbreak after the outbreaks.

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	**Public Health in Outbreaks** Disease outbreaks in India, Outbreak investigations, Epidemic control in India; integrated disease surveillance, legislation for the controlof outbreak in India, International Health Regulations.	15
II	**Disaster management** Introduction to Natural & Man-made Disasters Disaster Preparedness: Disaster Preparedness Plan, Disaster Preparedness for People and Infrastructure, Role of technology in disaster Preparedness, Disaster management: Hazard, Risk	15

	and Vulnerability, Concept and Relationship, disaster Risk Reduction, risk Analysis Techniques, People Participation in Risk Assessment	
III	Disaster Mitigation: Disaster Mitigation Strategies, Emerging Trends in DisasterMitigation, Role of Team, and Coordination, Rehabilitation, Reconstruction & Recovery Disaster Response: Role and responsibilities of different governmental organizationsat local, district, state, and central level.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		
Suggested Readings: Taori, K (2005) Disaster Management through Panchayati Raj, Concept PublishingCompany, New Delhi. Roy, P.S. (2000): Space Technology for Disaster management: A Remote Sensing &GIS Perspective, Indian Institute of Remote Sensing (NRSA) Dehradun. Sharma, R.K. & Sharma, G. (2005) (ed) Natural Disaster, APH Publishing Corporation,New Delhi		

Course code	Title: Bioethics, Biosafety and Regulation	Theory
Course Objectives: • To introduce students to the ethical principles and practices in public health research • To introduce students with the existing guidelines.		
Credits: 2	**Elective course**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Public Health laws and ethics, Human rights in public health, Role of governments in managing health of people, Public health regulations in Indian context, Public health information and privacy Introduction to Bioethics – principles and history, Clinical research: clinical research designs, clinical trial, conduct and regulation	15
II	National Ethical Guidelines for biomedical and health research, Regulations for medical devices, drug and biological material regulations	15
III	Research ethics in public health, Regulations during emergencies and outbreaks, Addressing newer	15

	challenges: Bioterrorism, conflicts and emerging infectious, diseases, Public Health laws in global economy, Global health hazards and security Different forms of power, influential to policy making Publication ethics and regulations.	
IV	Concept of governance and institutions, Different theories useful in policy analysis, Political nature of evidence for policy making in health, Written and verbal competence in communicating evidence to inform policy	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Class handouts

National Ethical Guidelines for biomedical and health research involving humanparticipants. ICMR, 2017

Guidelines and e-learning tools of Committee of Publication Ethics

CDSCO, 2013. Regulations and Guidelines Specific to Ethics Schedule Y & CDSCO-GCP., Available on www.cdsaindia.in/sites/default/files/02_Regulations_Dr.Bangaruranjan.pdf

CONSORT Checklist-CONSORT statement. 2010. Available on www.consortstatement.org/media/default/downloads/consort2010

The University of Illinois at Chicago. Evidence Based Medicine: PICO. Available onhttp://researchguides.uic.edu.

Course code	Title, Global Health Case studies	Theory
Course Objectives: To learn about health systems and services in high, medium, low income settings		
Credits: 2	**Elective course**	**Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction to international health, scope & importance. Socio-cultural perspectives of international health Health Problems, Issues and concerns that transcend national boundaries Policy development in international health, health care, educational and economic development. Globalization-Cultural, Political, Social and economic globalizing processes at work in today's world. Global burden of Diseases-How disease burden is measured and the causes of morbidity and mortality at global scale.	**15**
II	Global Governance-Neoliberal and neorealist regime theory, critical theory approaches, international law, role of corporations and	**15**

	private authority and the activity of global civil society. Public Health in developing & developed countries International Drug Policies & programmes International health legislations-Recruitment laws, Health Insurance Policies, academic equivalence etc. International funding for health care & conditions-Structural Adjustment Program (SAP). International Health Agencies and their role and contribution .	
III	International Public Health Programs- Millennium Development Goals,(MDG) International Health tourism Ethical issues in international health research. Publication ethics and regulations – introduction; fabrication, falsification, or plagiarism; ethics in scientific publications, guidelines and best practices of publications, committee of publication ethics, Guidelines for biosafety, animal ethics, stem cell guidelines, data sharing policies.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Textbook of International Health: Global Health in a Dynamic World By Yogan Pillay, Timothy H. Holtz, 3rd Edition. Oxford University Press.

Textbook of International Health By Paul F. Basch, Oxford University Press Global Health 101, By Richard Skolnik, 2nd Edition, An Introduction to International Health, By Michael Seear, Published by Canadian Scholars Press Inc. Essentials of International Health By Manoj Sharma, Ashutosh Atri, Global Health –Disease, Programmes, Systems and Policies edited by Michael Merson, Robert E, 3rd Edition

Credit	Core compulsory	**Internship**				100			2 Months.
Year		Research submission and Defence of Dissertation	Viva			25			

Research based Activities. **(Research Project.)**

1. Epidemiological Exercise on Water
2. Epidemiological Exercise on epidemiology
3. Medical Important Arthropods.
4. Measurement of morbidity and sickness-rates and ratio's.
5. Measurement of Risk Analysis for various morbidity, mortality and survival.
6. Exercise on Life Tables-Life expectancy at birth and at different ages.
7. Exercise on RCH Logistics
8. Exercises on population trends and growth.
9. Exercises on mortality and fertility- rates and ratios.

10. Formulation of a project proposal on selective topic/problem based on all the concepts of project planning and management learnt in the theory topics.
11. Community Needs Assessment-To conduct the community needs assessment for different stakeholders- Users-Migrant workers, villagers, women, children, tribal , industrial workers, farmers etc. & Doers-Govt., NGO, Private sector etc.
12. Visit to Vector Breeding Places in villages as well as hotels, market place, slaughter,houses, market, livestock shed etc.
13. Visit to district vector control office.
14. Visit to STI Clinics & ART Centre.
15. Visit to rehabilitations homes for mentally sick people.
16. Visit to police stations for collecting data on road traffic accidents and injuries.
17. Visit to Cancer Centre for study of cancer registry and various cancer prevention and treatment facilities.

Internship.

1. Two months' internship will be undertaken by all the candidates during 4th semester with an aim to integrate learning and practice in an active public health organization. This can be undertaken at governmental or non-governmental public health organisations or program management units. The internship should include the candidate's role and support in assessing, monitoring, or conducting surveillance of health problems/services in a population; research on population-based health problems; developing and/or implementing policies and intervention strategies to meet public health needs. Overall, it should contribute to the organization, and should help in understanding public health management and coordination and gaining personal confidence and leadership experience. Although finding a suitable internship opportunity lie with the candidate him/herself, mentors will facilitate the process. After the completion of 2 months of internship, candidates will be expected to submit a brief summary of public health program/challenge dealt with and solution proposed/implemented by the candidate at the end of second semester.
2. Candidates should submit their project plan and preliminary time scale with their chosen topic for dissertation at the end of the internship, after 4th semester to their mentor/tutor to seek appropriate approvals before embarking on the full investigation and project.

DISSERTATION

At the end of the fourth semester, candidates will submit their dissertation on previously chosen and approved topic for assessment. The dissertation will be evaluated by an internal examiner (40% weightage) and an external examiner (60% weightage) and a viva-voce.

Evaluation Pattern.

- ☐ Internal Assessment (IA): 25 Marks.
- ☐ External Examination: 75 Marks.

Total Marks: 100

Internal Assessment (25 Marks)

Component	Description	Marks
Assignment	A short research proposal or in-depth assignment related to course content,	5
Seminar/Presentation	Oral presentation of literature review, methodology, or findings	5
Class Test	One written class test based on conceptual and applied knowledge	10
Attendance & Participation	Active participation and discussion.	5

External Examination.

Section	Type of Questions	Number of Questions	Marks per Question	Total Marks

A	Very Short Answer (50–100 words)	5 out of 5	3	15
B	Short Answer (150–300 words	2 out of 3	7.5	15
C	Long Answer / Essay (400–500 words)	3 out of 5	15	45

Descriptive Note on the Examination Pattern.

- The syllabus is designed to evaluate both theoretical understanding and practical application skills in a research-based academic environment. The internal assessment promotes continual engagement with the subject matter through research proposals, presentations, and class tests, thereby fostering analytical and communication skills essential for public health or social science research.
- The external examination includes descriptive-type questions that require critical thinking, conceptual clarity, and integration of field-based or literature-supported evidence. The inclusion of short and long answer questions encourages students to reflect on methodologies, data interpretation, ethical considerations, and applied aspects of their field.

School of Public Health

MAA SHAKUMBHARI UNIVERSITY, SAHARANPUR.

This course is aligned with the model curriculum designed by the Ministry of Health and Family Welfare (2017-18)

Mission Of the School.

To emerge among the top institution in India and the world within next ten years through applicability, humanity, implementing and operating dynamic academic, administrative, and functional process, for optimal use of available resources.

While old threats continue to challenge health systems, new issues and challenges have appeared, thereby overburdening the health systems, Creation of a dedicated Public Health Cadre has been identified as one of the important pre-requisites in this direction. Public Health professionals help in bridging the gap between the clinical and managerial aspects of the program implementation and provide techno-managerial inputs. Public Health Programs demand a special emphasis on the study of disease epidemiology, various determinants of health & emerging challenges in health, public policy making and program management.

Cultivate leaders and innovators who have a comprehensive understanding of the business as well as the human aspects of health care to transform the healthcare industry and pursue population health across the country and around the world. Our multidisciplinary and integrated curriculum is tailored to early-career students with diverse academic backgrounds. Graduates will demonstrate knowledge growth, competency development, and practical skills in the management of health focused organizations informed by an understanding of domestic and global public policy.

Vision

To lead, to heal, to serve

To provide affordable quality education, while equipping students with knowledge and skill in their chosen streams, inculcate values, identify hidden talents, provide opportunities for students, to realise their full potentials and thus shape them into future leaders, entrepreneurs and above all a good human being.

Revised syllabus.
Master of Public Health
For
School of Public Health
Maa Shakambari University, Saharanpur

Members, Board of Studies (Master of Public health)

S.No.	Name	Subject	College/University	Convenor/Member/ External Expert	Signature
1.	Prof. Garima Jain	Faculty of Science	D.A.V College Muzaffarnagar	Dean Of Science.	
2.	Mr. Rishi pal Singh	Zoology	Lala Kishan Chand Govt. P.G college Gangoh, Saharanpur	Convenor	
3.	Prof. Ram Kishan	Statistics	D.A.V College Muzaffarnagar	Member	
4.	Prof. Y.P.S. Topal	Sociology	J. V. Jain College Saharanpur	Member	
5.	Prof. Sudhir Kumar	Medical Science	Government Medical College Pilakhani, Saharanpur	External Expert.	
6.	Dr. Arvind Kumar	Zoology	Government Degree College B.B. Nagar Bulandsehar	External Expert	

ABOUT THE SCHOOL.

The School of Public Health is going to establish with the objective of promoting post-graduate studies and research in Master in Public Health. Public Health is the stream which is strive to inculcate the virtue, core value, threats, and challenge of dynamic, divers' field of research for the betterment of human society all over the world. Life science embarks a relationship between the other stream and is the base of all sciences which are engaging in the developing of healthier society. Therefore, the importance of Master of public health in any curriculum is self-evident. This is the science which attract the students and scholar to provide the best remedies for the development of healthier society by their continuous engagement in research and development of healthcare professional and cadres.

Eligibility Criteria for the Masters in Public Health Program:

Since public health is interconnected and influenced by our surrounding, global institutions have wide eligibility criteria for undertaking the Masters in Public Health (MPH) programs. In the Indian context, we see a very important role for candidates from multiple professional backgrounds within MPH programs. Thereby, the eligibility Criteria for MPH program in in Maa Shakambari Devi University may include both science as well as non-science graduates.

The following are suggested eligibility criteria for the MPH Program.
Graduates in the followings.

- Life science/ Medicine / AYUSH / Dentistry / Veterinary Sciences / Allied and Health Sciences /
- Statistics / Biostatistics / Demography / Population Studies / Nutrition / Sociology / Psychology / Anthropology/ Social Work

Although highly recommended, candidates need not be restricted to the above disciplines and graduates from selected backgrounds other than these, may be taken by the Universities, when considering the overall aptitude and eligibility of a certain candidate.

Duration of the course: This course is designed to be a two years' full time program including internship and dissertation.

About the MPH Course

MPH degree programme is divided into four semesters. The courses in each semester are designed to ensure students acquire identified competencies. The revised MPH curriculum, will be taught with interdisciplinary spirit; integrating knowledge and practice across disciplinary boundaries to address public health challenges.
The curriculum is composed of several core and elective courses, some of which are concentrated in a single semester, whereas other courses like nutrition, social epidemiology, extend in succeeding semesters of MPH study.

Course outline

The MPH course will comprise of 15 Core modules and several elective modules which may be offered by universities depending on their capacity and capability. **Four** elective streams comprising five modules each have been suggested in this document in addition to **15 Core** modules. A candidate will need to pass 15 Core (compulsory) modules, and four(4) elective modules of the chosen stream to successfully complete the program

Teaching and evaluation

MPH and M.Sc. Health Sciences are offered as two-year full-time courses. The two-year course is further organized into four teaching Semesters. Each Semester consists of 15 weeks of teaching. There is at least one assessment for every 4 hours of teaching. Assessment may be in the form of tutorial, test, presentation, term papers, assignments etc. 25% assessment is done during term so that there is continuous evaluation of the student, remaining 75% assessment is done at the term end examination.

A. Core modules.

- Fundamental of public health
- Epidemiology
- Biostatics
- Basic nutrition

- Human biology
- Non communicable and Communicable disease
- Immunology
- Public Health and Nutrition
- Maternal and Child Health Programme
- Environmental and Occupational Health
- Health Economics
- Health Behaviour
- Qualitative and Quantitative Research Method
- Health system management
- Public Health and Disaster Management

B Elective stream.

- Field study of public health Programme
- Population and health
- Health Policies and Planning
- Disability and public health
- Aging and Society
- Urbanization and Health
- Bioethics, Biosafety, and Regulation.
- Global Health Case studies

Note: Institutes may also choose to offer elective modules in other thematic areas such as *Advanced Health Economics and Financing, Advanced Health Informatics, Demography and Population sciences, Advanced Environmental and Occupational health, Global health security and International Policies, Advanced Health Promotions, Human Resources for Health* etc

C. Internship

D. Dissertation

Specific to The Course Content: Successful candidates are expected to demonstrate the following Health settings.

1.Apply the course learning to the public health system and its challenges:

- Demonstrate adequate knowledge and skills to a wide range of public health topics
- Critically conduct the situational analysis and develop action plan for identified public health issues
- Develop workforce for taking public health related responsibilities in defined geographical areas
- Develop an understanding of the epidemiological transitions of programs specific to each State within the country to prioritize public health challenges for policy making

2. Develop, implement, and evaluate key public health policies:

- Develop a capacity to apply conceptual framework to understand policy processes in health care
- Understand roles of supply and demand in policy making in health care
- Develop an understanding to facilitate inter-sectoral coordination and public-private partnership
- Critically analyse resource allocation for competing public health interests across programs Formulate context appropriate policies and design programs to address public health challenges, effectively

3.Develop and demonstrate competency in managing health systems at different level.

- Identify immediate and long-term health program goals at national, State and district levels
- Prioritize health issues in population

- Describe various managerial information systems and their application
- Describe program management plans in health
- Understand and apply core management principles for human resources in health
- Understand and apply program budgeting and economic evaluation
- Understand and apply quality assurance and improvement techniques in health

4. Develop competency in research:

- Understand and apply ethical principles in research, evaluation, and dissemination
- Develop competence to critically evaluate existing information and identify gaps
- Formulate and test research hypotheses in real world scenario
- Translate research knowledge for evidence-based policy making

Syllabus M.Sc. in Public Health (MPH)

(Effective from 2023-24)

(Course Distribution)

Year	Semesters	Course Code	Core/Elective/Value Added	Paper Title	Theory/ Practical/ Project	Credits	Internal Marks	External Marks (Min Marks)	Total Marks	Minimum Marks (INT+EXT)	Teaching Hours Theory + Tutorial	
2 Year Course as per MCI Ist Year	Semester-I		Core Compulsory	Fundamentals of public health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Epidemiology	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Biostatistics	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Basic nutrition	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective course	Field study of public health Program	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
				Population and Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
	Semester II		Core Compulsory	Human Biology	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Non- communicable and Communicable diseases	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Immunology		4	25	75(25)	100	40	3x15=45	2x15=30

			Core compulsory	Public Health & Nutrition	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective Course	Health policy and planning.	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
				Disability and Public Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
		MPH as per NEP2020										
2 Year -Course as Per MCI	**Semester -III**		Core Compulsory	Maternal and Child health and programmes		4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Environmental and occupational Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Health Economics	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory	Health Behaviour	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective Course	Aging and society.	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
				Urbanization and Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
	Semester -IV		Core Compulsory -	Research Methodology in Public Health	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory -	Health systems management	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Core Compulsory -	Public health and disaster outbreaks	Theory	4	25	75(25)	100	40	3x15=45	2x15=30
			Elective course	Bioethics, biosafety andregulations.	Theory	2	25	75(25)	100	40	3x15=45	2x15=30
				Global Health Case Study	Theory	2	25	75(25)	100	40	3x15=45	2x15=30

			Internship	-------	8	---	----	100	------	------	2 Months.
			Research Submission and Defence of Dissertation .	**VIVA-**	2			25			-

Revised syllabus

For

Master in public Health

SEMESTER - FIRST.		
Programme/Class: M.P.H	**Year:** P.G. First Year	**Semester:** FIRST
Course Code:	**Course Title: Fundamentals of public health**	**Theory**
Explanatory note for semester I		
Semester I Introduce students to the discipline of public health. Students are also exposed to supportive disciplines of public health that is epidemiology and biostatistics. Keydeterminants of health viz human physiology, nutrition, social issues are also discussed.		
Course Objectives:		
• Demonstrate Understanding of Public Health Concepts • Identify Determinants of Health and Disease • Apply Public Health Approaches to Health Problems • Understand the Role of Epidemiology and Biostatistics • Address Public Health Emergencies and Disasters		

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	History of public health: The science and practice of public health, Health and its determinants: Biological,Behavioural, Socio-economic, Cultural, Environmental, Geographical etc, Concept of Primary Health Care: Community Diagnosis & Needs Assessment. Ecology of health, Right to health	15
II	Global health and epidemiological transition, Sources of global health data, Disease, its measures and prevention, Public Health delivery system in India.	15
III	Functional organization of the public health system in India, Evolution of global public health initiatives: primary health care, selective primaryhealth care, MDGs, SDGs.	15
IV	Introduction to National Health Policy – 1983 & 2002, National Population Policy – 2005, National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), National Public Health Programs	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

1 Oxford textbook of Public Health Ed. Roger Detels, James Mcewen, Robert Beaglehole, and Heizo Tanaka Oxford University Press (OUP) 4th Edition: 2002.28

2. Public Health at the Crossroads – Achievements and Prospects. Robert Beaglehole and Ruth Bonita 2nd Edition Cambridge University Press

3. Maxcy-Rosenau-Last Public Health & Preventive Medicine, Fourteenth Edition Ed RobertWallace, MD, et al.

4. Epidemiology and Management for Health Care: Sathe, P.V. Sathe, A.P., PopularPrakashan, Mumbai, 1991.

5. International Public Health: Diseases, Programs, Systems, and Policies by MichaelMerson, Robert E Black, Anne J Mills - Jones and Bartlett Publishers.

6. Preventive and Social Medicine, K Park, Bansaridas Bhanot Publishing House.

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

course Code	**Course Title. Epidemiology**	Theory
Course objective To familiarize students on science and methods of epidemiology, To understand the applications of epidemiology in public health decision making.		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Historical aspects, definition, aim and uses, Descriptive Epidemiology, Social Epidemiology- Definition, History, Aims, Basic principles & Methods	**12**
II	Risk measurement, Measurement of morbidity and mortality: Incidence, Prevalence, Age-adjustment and survival analysis, use of morbidity and mortality	**15**
III	Epidemiological study designs, Bias, confounding and interaction, Causal association Disease Surveillance. Case study of disease.	**15**
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Gordis Leon. Epidemiology (Fifth edition) , Elsevier Saunders, 2013.
Dona Schneider and David E. Lilienfeld. Lilienfeld's Foundations of Epidemiology, FourthEdition, Oxford University Press, USA, 2015.
Porta Miquel. A Dictionary of Epidemiology, Oxford University Press, USA, 2014
Somerville Margaret, et al., Public Health and Epidemiology at a Glance, Second Edition,Wiley-Blackwell, 2016
Beaglehole. R. Bonita, et. al Basic Epidemiology, 2nd Edition, WHO Publication, Geneva,2006.
Spassoff R.A. Epidemiologic Methods for Health Policy, Oxford University Press, 1999
Barkar, D.J.P., Practical Epidemiology: Churchill pub, Livingstone, 1991.
Knox E. G. Epidemiology in health care planning: A Guide to the Uses of a ScientificMethod, Oxford University Press, USA.

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course Code	Course Title. Biostatistics.	Theory
Course Objectives: To introduce students to the use of bio-statistics in health sciences To understand the role of biostatistics as a supportive discipline of epidemiology		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Introduction to biostatistics: Descriptive and Inductive statistics, Describing data: Variables: Nominal, Ordinal and Interval scale variables. Measures of central tendency: Mean (arithmetic, geometric, harmonic) Median, Mode; Merits anddemerits of different measures. Measures of dispersion: Range, Quartile deviation, Mean deviation, Standard Deviation, Variance; Merits and demerits of different measures of dispersion. Measures of Skewness and Kurtosis; Graphical presentation of data. Correlation: Concept of correlation, Pearson correlation coefficient, and its properties; Spearman ranks correlation coefficient.	15
II	Introduction to the concept of probability, events; exhaustive, mutually exclusive events; laws of probability, additive and multiplicative laws of probability and their properties, Discrete probability distributions: Binomial distribution and Poisson distribution and their properties. Continuous probability distribution: Introduction tonormal distribution and its properties.	15
III	Sampling methods: Population, Sample, Parameter, and Statistic, Type of sampling, Probability sampling, Non-probability sampling, Simple random sampling with and without replacement, sample size determination, Stratified random sampling.	15

IV	Test of Significance: Concepts in Inductive statistics: Sampling distribution of mean, Standard error. Statistical hypothesis, critical egion, level of significance, and two types of errors. t-test for small samples and tests based on normal distribution for large samples. Chi-square goodness of fit, Testing the association of attributes, Nonparametric tests: Sign test, Wilcoxon signed rank test, Run test, K-S test, Linear regression, Multiple linear regressions, Survey methods - quantitative and qualitative survey methods in medical & public health sciences. Working with data: Computing variables, recoding variables, sorting data, grouping data, ensuring quality of data, Introduction to statistical software. one way ANOVA and two-way ANOVA, R-Software, SPSS, etc.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Statistics for Social sciences: T. Rajaretna RRm, Sage publication. New Delhi 2016

Fundamentals of Statistics (Seventh Edition): S.G. Gupta. Himalaya Publication,Mumbai, 2017

Introduction to Biostatistics and Research Methods(Fifth Edition): P.S.S. Sundar Rao,

J. Richard, Prentice Hall, New Delhi, 2012

An Introduction to Biostatistics: A manual for students in Health Sciences: P.S.S.Sundar Rao, J. Richard Prentice Hall, New Delhi, 1996

Bio-Statistics: A foundation for Analysis in the Health Sciences: Daniel, W.W., John Wiley and Sons Pub., Canada, 1991.

Bio-Statistics: A Manual of statistical methods for use in the Health, Nutrition and Anthropology: K. Vishwas Rao, Jaypee Brothers Medical Pub., New Delhi, 1996

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course Code.	Course Title. Basic Nutrition	Theory
Course Objectives: To familiarize students to the fundamentals of population studies and its links withhealth To impart practical knowledge and skills of demographic and health data sources andpractical use of data		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction to nutrition, inter-relationship between food, nutrients & health. Nutritional Status. Common terms related to nutrition., Energy: Introduction, Physiological fuel value,. Basal Metabolic Rate, Total EnergyExpenditure, Specific dynamic action, Respiratory Quotient, Carbohydrates: Classification, function, sources, RDA & deficiency	**15**
II	Carbohydrates: Classification, function, sources, RDA & deficiency, Fibre – types, role in health and diseases. Lipids: Classification of fatty acids, Function, sources, RDA, & deficiency. Saturated fat, MUFA,	**15**

	PUFA, essential fatty acids, prostaglandins. Cholesterol – introduction, sources, requirement.	
III	Proteins: Classification of amino acids. (essential & non- essential), functions of protein, sources, RDA & Deficiency. Evaluation of the protein quality – biological value, protein efficiency ratio, nitrogen retention, net protein utilization. Vitamins: Classification – Fat soluble & water soluble, function, sources, RDA &deficiency	15
IV	Minerals: Major minerals – Ca, P, Mg, Na, K. Minor minerals – Fe, I, F, Zn, Co, Mn,Se, S, Cr., Function, sources, RDA & deficiency. Water: Role of water in the body, its requirement, extracellular & intracellular fluid,maintenance of water balance	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		
Suggested Readings: **Mann, J. and Truswell, S. eds., 2017.** Essentials of human nutrition. Oxford UniversityPress **Eastwood, M.A., 2013.** Principles of human nutrition. Springer. **Bender, D., 2014.** An introduction to nutrition and metabolism. CRC Press		
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.		

Course Code	Course Title. Field Study OF public Health Programme	Theory

Course Objectives

1. Understand the structure and functioning of public health systems.
2. Identify key health issues in a community.
3. Apply data collection tools and methods in the field.
4. Analyse public health interventions in real-world settings.
5. Communicate findings through presentations and written reports.

Credits: 4	Course Minor elective	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	Functional organization of the public health system, Infectious disease control programmes and policies.	10
II	Reproductive, maternal and child health services Water sanitation programme and nutritional interventions. Adolescent health initiative. Environmental and occupational health.	15
	Purpose and importance of fieldwork in public health.	15

III	Ethical considerations and research protocols. Planning for fieldwork: tools, design, logistics. Scheduled field visits to local health facilities or communities. Daily logbooks and group discussions. Preparation of field reports.	
IV	Overview of primary, secondary, and tertiary health care systems. Visit to public hospitals, PHCs, CHCs, NGOs. Health workforce roles and intersectoral collaboration. Household surveys, key informant interviews. Participatory rural appraisal (PRA) methods. Health mapping and use of GIS.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Class handouts.

Park's Textbook of Preventive and Social Medicine by K. Park Banarsidas Bhanot publishers revised edition.

Introduction to Public Health by Mary-Jane Schneider, Jones and Bartlettt learning Publisher.

Essentials of Public Health by Bernard J. Turnock, Jones and Bartlettt learning Publisher.

Field Research in Public Health by Gillian Elinor

Rural health care system in India, Ministry of Health and Family Welfare, Government of India Common Review Mission Reports (1st to 10th), National Health Mission, Governmentof India Joint Monitoring Mission Reports, World Health Organization, World Bank andGovernment of India **Evaluation Reports** – International and National
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.

Course Code	Course Title. Population and Health	Theory
Course Objectives To familiarize students to the fundamentals of population studies and its links with health To impart practical knowledge and skills of demographic and health data sources and practical use of data		
Credits: 4	**Course Elective**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Introduction to population and health: definition, scope, Concept of demography, Population components, Demographic transition theory , Sources of demographic and Health data : Population census, Vital registration system, Sample Registration System, National Family Health Survey (NFHS), District Level Health Survey (DLHS), Annual Health Survey (AHS), National Sample Survey Organization (NSSO), Demonstration of the practical use of the data and its advantages and limitations.	20
II	Population composition: Levels and trends in the sex and age structure of the population of world, developed and developing countries. Concepts, definition, determinants and measurement of fertility, mortality and migration, population projection.	15
III	Life tables: Concept, importance, and methods. Population policy: Population policy linkages with health issues.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

1. The Springer Series on Demographic Methods and Population Analysis: Ed.: Land, Kenneth C. "The Plenum Series on Demographic Methods and Population Analysis" Durham, NC 27708-0088, USA , 2014
2. Population Studies and Development from Theory to Fieldwork: Petit, Véronique (Ed.) Springer International Publication AG 2018
3. Handbook of Population: Ed. Dudley Poston and Michael Micklin. Springer publication, Edition one, 2006
4. Principles of population Studies: Asha Bhende and Tara Kanitkar, Himalaya Pub, Houses, Mumbai, 2011
5. The methods and Materials of Demography (Second edition): Siegel, Jacob S., and David A. Swanson,: Elsevier Academic Press, San Diego, 2004

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Explanatory note for semester II

The objective of semester II is to expose students to the basic Human biology, None communicable and communicable disease and its etiology, Immunological response of the body, Public health And Nutrition its impact and assessment, Health policy and planning. And the role of government and non-government. organizations.

Course Objectives:

To provide an understanding about the structure and function of the human body, and physiological aspects of the organ systems.

Course code.	Course title. **Human Biology.**	Theory
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Cell's structure and function, type of cells, different type of cell Organelles, Cell membrane structure and function. Different type of tissues, Structure of D.N.A and its replication. Structure of R.N.A and types,	15
II	Human life cycle: growth and development, sexuality and conception, puberty and adolescent health, hormonal impact on adulthood.	15
III	Human Anatomy and physiology: Structure and function of organ systems; Musculo-skeletal, Cardiovascular, Respiratory, Digestive, Urino-genital system, Endocrine Systems,	15
IV	Homeostasis, lymphatic, Nervous system, and Sense organs. Blood its composition and functions blood groups, Rh Factor, blood coagulation.	10

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Textbook of Medical Physiology : A. C. Guyton, Prism Books Pvt. Ltd., Bangalore,
Anatomy and Physiology for Nurses : R.S. Winwood, J.L. Smith, Education Academicand Medicinal Publishing Division of Hodder and Stoughton, London,
Atlas of Anatomy : Casey Horton, Marshall Cavendish Books, London,
Basic Clinical Physiology : J.H. Green , Oxford University press, Delhi
Samson Wright's Applied Physiology : Keele, Neil, *et.al.* (Ed) Oxford University press,Delhi

Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title ..**Non communicable and communicable disease**	Theory

Course Objectives:

- To understand the biology of pathogens and the mechanism of action of antibioticsand antivirals
- To understand the pathology, pathogenesis, clinical manifestation, mode of transmission, prevention and control of diseases of bacterial and viral etiology
- To understand the principles of infectious disease control programs
- To orient students about the national disease control programs,
- Critical evaluation of various disease control programs

Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	General overview of infectious diseases and their impact in developing countries. Epidemiology of infectious diseases, Recognize the risk factor approach to prevent non-communicable diseases,	**15**
II	Structure of prokaryotic cell, pathogenic modifications Anti-microbial agents, drug resistance , Comprehend the Population based/public health approaches to prevention of common NCD risk factors (physical inactivity, tobacco	**15**

	and unhealthy diet) Familiarize with the current projects on targeting the prevention of NCDs, including, innovations in prevention.	
III	Infectious disease control programmes (including agent biology, epidemiology, pathogenesis and pathology, clinical presentation, and management; public healthstrategies and mechanisms) Incubation periods,Epidemic patterns, Modes of transmission, Transmission dynamics, Measures of infectiousness Secondary, attack, rates, Vaccine preventable diseases: , polio, diphtheria, tetanus, measles. Respiratory diseases: Tuberculosis, leprosy,	15
IV	Contact: STD s and AIDS, hepatitis. Vector borne: Malaria and filaria, dengue, leptospirosis, Zoonotic: plague and rabies. Neglected tropical diseases, Hypertension, Diabetes mellitus, Cancers, Mental health, Stroke, Burns/trauma/ accidents etc.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Duguid et al. Textbook of Medical microbiology
Javetz and Melnick: Adelberg's Medical Microbiology
World Health Organization: Report on infectious diseases, and Report on Multidrugresistance, World Health Organization, Geneva
Principles and Practice of Medicine: Davidson, Edward, Bouchier et. Al., PearsonProfessional Ltd. London
Biology of Disease: Jonathan Phillips, Paul Murray, Blackwell Science Ltd. Australia,
Human Virology: A textbook of Students of Medicine and Microbiology, Dentistry,Leslie collier, John Oxford, Oxford University Press, Tokyo
Textbook of Medicine: Cecil, Bennett, et al., Harcourt Brace Joanvich Inc. U.S.A.
Nelson K E : Infectious disease epidemiology: theory and practice
Griesecke J : Modern infectious disease epidemiology
National Disease Control Programmes websites and class handouts

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title : Immunology	Theory

Course Objectives:

- To provide a basic knowledge of the immune response and its involvement in health and disease, basic components of immune system .
- Antigen and antibody reaction. And immunization program.

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	Introduction, basic concepts in immunology, components of the immune system Innate immunity: Different lines and layers of defence, The complement system .	15
II	Adaptive immunity- humoral and cell mediated: The structure of a typical antibody molecule, Interaction between the antibody and specific antigen; Antigen processing andpresentation	15
III	Cytokines and immunomodulation Hypersensitivity and allergy.	7
IV	Vaccines and Vaccination: immunology of selected infectious diseases of public health importance	15

	Applications of immunology in diagnosis and management of common diseases	

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Essential Immunology: - Ivan Roitt, Blackwell scientific publications, LondonEdinburgh Boston, Australia, 1997.
Immunology: Janis Kuby, W.H. Freeman and company, U.S.A.1992
Immunobiology: The immune system in health and disease: J. Travers, currentbiology pub, New York, 1997.
Vaccines Prospects and perspectives: Harmindar Sing, Rajesh Bhatia, Forward pub.Co., Delhi, 1993
Relevant documents and Suggested texts therein from the WHO website
WHO Technical Publications: Vaccines, Human Genetics Program series.
Harrison's Principles of Internal Medicine 16th Ed.-2005

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	**Title... Public health and nutrition**	**Theory**

Course objective.

- To understand the basics of nutrition, its components. And nutrition deficiencies burden.
- To identify public health nutrition interventions
- To study the impact of nutritional policies and programmes and nutritional status of the population

Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	Introduction to public health nutrition, Nutrition Transition: Demographic, economic transition, poverty alleviation, foodconsumption patterns	15
II	Undernutrition: global and Indian prevalence of undernutrition, risk factors consequences, Micronutrient deficiency disorders: prevalence, risk factors, Interventions that worked globally, lessons learnt	15
III	Overnutrition: Evolutionary principle, Obesity: diabetes, prevalence, and risk factors: Physical activity and inactivity, screening of those at nutritional risk, Life style diseases: Interventions that worked globally, lessons learnt.	15
IV	Guidelines for prevention of non- communicable diseases, Food Security: Factors affecting food security, economics food security andcommunity development, Food security bill.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Vir S.C., (2015), Public health nutrition in developing countries (Part I and II), Woodhead Publishing India Pvt, Ltd.

WHO and Chan, M., (2011) 'Haemoglobin concentrations for the diagnosis of anemiaand assessment of severity', Geneva, Switzerland: World Health Organization, Geneva pp. 1–6.

Cashman, K. D., Sheehy, T., & O'Neill, C. M. (2018). Is vitamin D deficiency a publichealth concern for low middle income countries? A systematic literature review. European journal of nutrition, 1-21

Suggested Continuous Evaluation Methods: Continuous internal evaluation throughinternal tests, quizzes and Presentation.

Course code	Title. Health policy and planning.	Theory
Course objective. • To understand health systems and health policy making processes • To understand the health planning from the perspective of national and globaldevelopments concerning health sector		
Credits: 4	**Elective**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Health systems – goals, elements and characteristics, multi-levels of operations,interactions and interrelationships, Health systems frameworks: six building blocks of health systems – Governance, Financing, Human resource	15
II	Overview of the health system in India, human resource, Health system development and strengthening, Health Policy and analysis – policy actors, focus and forms of policy analysis – policy analysis triangle	15

III	Definition of Planning, Health Planning Models History of Planning in India. National Health Programs ▪ Integrated Child Development Scheme ▪ RNTCP ▪ NACO ▪ RCH ▪ NHM: NRHM & NUHM ▪ NVBDCP ▪ IDSP ▪ NIDDCP ▪ NLEP ▪ NPCB ▪ Pulse Polio Immunization Program ▪ National Mental Health Program ▪ National Cancer Control Program ▪ National Program for Prevention and Control of Diabetes, Cardio-vascular diseases and stroke ▪ INAP	15
IV	Development of National Health Policy: Evolution of Indian National Health Policies1981-83, 2001 and 2017, Global agendas: Health for all- Millennium Development Goals- Sustainable Development Goals Primary Health Care - Universal health coverage	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:
National Health and Research Policy Documents Expert Committee Report on Public Health Systems in India 1996 Collins, C., Green, A., 2014. Valuing Health Systems: A Framework for Low and Middle-Income Countries. SAGE Publications. Gupta, R.P., 2016. Health Care Reforms in India: Making Up for the Lost Decades. Elsevier India. De Savigny, D., Adam, T., Policy, A. for H., Research, S., Organization, W.H., 2009. Systems Thinking for Health Systems Strengthening, Alliance Flagship report series. Alliance for Health Policy and Systems Research. Gilson, L., Alliance for Health Policy and Systems Research, World Health Organization,2012. Health policy and systems research: a methodology reader
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title : DISABILITY AND PUBLIC HEALTH	Theory
Course objective. • To introduce students to disability as a public health issue • To identify needs of the disabled and find ways to address the issues that the disabled face in developing countries		
Credits: 4	**Elective Course**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Defining disability: evolving concept of disability, medical model, social model, and human rights perspective of disability Disability and public health: Issues, definition, and ethics.	15
II	Data sources and estimating disability: global and national level data sources, trends in developed and developing countries, epidemiological data on disability Determinants of disability: preventable disability, developing preventative strategies for avoidable disabling conditions,	15
III	Health and social care needs of disabled: health care needs of disabled, accessibility, availability, and affordability of health services for disabled, approach to comprehensive, integrated care for disabled, role of public health .	15
IV	Social and psychological experience of disability, stigma and discrimination faced by affected individuals, identification of care needs, role of psycho-social support, approach to comprehensive, integrated care for disabled Public health implications of disability: overview of policy, programmes, innovation, interventions, rehabilitation, reablement.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

1. Drum C.E. Krahn G.L., Hank Bersani Jr. Disability and Public Health. Washington, USA: American Public Health Association. Washington USA. 2016 Print ISSN: 0090-0036 | Electronic ISSN: 1541-0048
2. Lollar D.J, Anderson, ElenaM (eds) Public Health Perspectives on Disability: Epidemiology to Ethics and Beyond. USA: Springer Publication, 2011. ISBN 978-1-4419-73412
3. Berghs M, Atkin K, Graham H, Hatton C, Thomas C. Implications for public health research of models and theories of disability: a scoping study and evidence synthesis. Published by Public Health Res div of National Institute for Health research. 2016.
4. Beyrer C, and Pizer HF, (eds). Public health and human rights; evidence-based approaches. Baltimore, MD: The Johns Hopkins University Press, 2007.
5. Jean O'Hara Jane McCarthy Nick Bouras. Intellectual Disability and Ill Health - A Review of the Evidence . Cambridge University Press India Pvt Ltd, 2010. ISBN: 9780521728898, 0521728894

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Explanatory note for semester III

This semester will give insights about the maternal and child health. morbidity and mortality, rate in India and other countries. This will also discuss about the safety and measures of the pregnancies its complication and child health issues. nutrition methods and techniques, parameters of the nutrition and nutrition deficiency disorders, socio- psychological issues of ageing. Health and its economics, national and international index of health. Health behaviours.

Course code	Title: Maternal and Child Health Programs	Theory

Course Objectives:

- To introduce students to the essential components of maternal and child health andhealth care programme
- To discuss global and national maternal and child morbidity and mortality trends itsimportant interventions to responsible for the change in trends

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	Course Topic	No. of Lectures Hours
I	**Women's & maternal Health** Burden of reproductive ill-health: unintended pregnancies, unsafe abortions, MTP act, Non-sexually transmitted infections, infertility, Violence against women, Evolution of the concept of reproductive health and its implications, early human development and public health implications, Gametogenesis, fertilization, implantation, Foetal development, Preconception period , maternal and paternal risk factors for maternal and	15

	foetal outcomes , Developmental origins of adult diseases.	
II	Antepartum – antenatal care and significance, physiological changes during pregnancy, complications of pregnancy, high risk pregnancy, Intrapartum- stages of labour and delivery, components of labour, danger sign and management of labour complications of labour and delivery, Postpartum – care, complications of postpartum, Maternal morbidity and mortality; levels and causes of maternal mortality, Contraception, sterilization, population control	15
III	**Child Health:** Levels and trends in child mortality, major causes of neonatal, infant and childmortality and public health interventions, Major causes of neonatal mortality; Preterm births, low birth weight and publichealth interventions; birth defects, Common morbidities among young children; lower respiratory tract infections,diarrhoea,	15
IV	Immunization; coverage, factors, Infancy and child hood : Growth and development; physical, motor, cognitive, psycho-social and language development.	15

	Child nutrition, Policy and programmes: the main national and international interventions for prevention of reproductive and childhood/adolescent morbidity and mortality, including RMNCHA+, JSSK, RBSK, IYCF, IMNCI, Maternity benefit schemes.	

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Kotch Jonathan B. Maternal and Child Health: Programs, Problems, and Policy in Public Health 3rd Edition Jones & Bartlett Learning; 3 edition (May 11, 2012) ISBN-13: 978-1449611590

Ehiri John(Ed.) Maternal and child health: Global challenges, programes and policies .Springer-Verlag US 2009

Dutta D C. Textbook of Obstetrics: Including Perinatology and Contraception. JaypeeBrothers Medical Publisher Ltd. New Delhi . 8th Edition. 2016

Dutta D C Textbook of Gynecology . JAYPEE BROTHERS MEDICAL PUBLISHERS (P)LTD New Delhi 6th edition 2013

Behrman RE and Kliegman R. Nelson's textbook of pediatrics. Elsevier IncPublication 2016 ISBN: 978-1-4557-7566-8

Ghai O P. Essentials of Pediatrics. CBS Publications and Distributions Pvt Ltd. NewDelhi 8th Edition 2013

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title: **Environmental and Occupational health**	Theory

Course Objectives:

This course explores the impact of environmental and occupational factors on human health. It addresses the identification, assessment, and mitigation of hazards in the environment and workplace, with an emphasis on policy, regulation, and preventive strategies.

Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**

Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester

Unit	**Course Topic**	**No. of Lectures Hours**
I	Principles of environment health and human ecology Food sanitation and safety, Vector and rodent control, Theories and history of environmental health Environmental health policy and legal mechanisms in a National and, international context, Ecosystems in various settings (linking the built environment, transport, housing and green space to human health), Environmental pollutions, waste disposal and treatment	**15**
III	Workplace safety: Prevention of occupational hazards (including accident prevention) Legislations related to occupational health, Employees State Insurance Scheme, Government, and other schemes for working population in India	**15**

III	Management of environmental hazards, natural disasters, Central Pollution Control Board (CPCB) Guidelines, Environmental health impact, assessment. Climate Change & Health, Biomedical Waste Management	15
IV	Indoor and outdoor air pollution, Occupational respiratory risks, non-ionizing and ionizing radiation, Noise exposure in work settings, Displacement and mental health, Disparities in exposure and health outcomes, Community-level risk assessment, green jobs and sustainability.	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Occupational Health: Management and Practice for Health Practitioners By S. P. Hattingh, 3rd edition.

Urban Health: Global Perspectives edited by David Vlahov, Jo Ivey Boufford, Clarence E. Pearson, Laurie Norris, published by Jossey bass

Industrial Health Jack E. Peterson American Conference of Governmental Industrial Hygienists, 1991

Environmental and Health Impact Assessment of Development Projects: A edited by Robert G. H. Turnbull, Elsevier Sciences Publication

Environmental Chemistry, B.K.Sharma, Krishna Prakashan Media.

Environmental Science by S C Santra, Publisher: : New Central Book Agency Calcutta, 2001

Perspectives in Environmental Health -Vector and Water Borne Diseases Mukhopadhyay Aniruddha, De A K

Sociology Anthropology, and Development, Michael M. Cernea, The World Bank Washington, D.C, 1994

Development and the Environment, Lewis T. Preston, The World Bank Washington, D.C, 1992

Course code	Title: Health Economics	Theory
Course Objectives: • To impart knowledge on health care financing health economics including cost- benefit and cost-utility analysis		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		

Unit	Course Topic	No. of Lectures Hours
I	Health financing, budgeting, and economics. Market model, market failure, and the roles and limitations of markets in health care,	10
II	Overview on Health financing in Developing countries Health financing concepts such as cost and cost classification, Concepts of efficiency, effectiveness, equity, elasticity of demand, costing, production, marginal cost analysis, and opportunity cost	15
III	Budget management, Cost-effective analysis, Cost-benefit analysis, and Cost-Utility analysis;	7

IV	Economic analysis reporting for projects Health insurance in India: Private insurance, community-based insurance schemes, Universal health coverage and role of health care financing.	10

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Essentials of Health Economics: Diane M. Dewar, series editor: Richard Rigelman, United states, 2010

Health Economics: Peter Zweifel and Friedrich Breyer, Oxford University Press, New York, 1997

Health Program planning and evaluation A practical, Systematic approach for community Health; L. Michele Issel Jones and Bartlett Publishers, Canada,2009

Health economics, an International Perspective; Barbara Mcpake, Lilani Kumaranayake and Charles Normand, Routledge, Taylor & Francis Group, New York, 2006

Health Economics in India (Edited), Prashant Panda and Himanshu Rout, New CenturyPubns, 2007

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Further Suggestions:

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Course code	Title. Health Behaviour.	Theory

Course objective.

- To introduce students to the factors affecting on health and illness behavior ofpopulation, and methods of behavioral modifications

Credits: 4	Core Compulsory	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction to health behavior research; attitude, behavior, perception, risk, self-efficacy etc. and how these concepts used in prevention and health promotion program. Introduction to health behavior theories and models: Health Belief Model, Transtheoretical model, Theory of Reasoned Action and Planned Behavior	15
II	Behavior change communication: Adherence and Resistance, Motivation and behavior change, illness, diseases and behavior change, social and psychological factors contributing to long-term behavioral change, Health education : methods of health education interventions, ways of communication,and assessment of impact of health education	15

III	Health promotion and disease prevention : Lay Representations of illness, social andpsychological factors involved in the illness experience , Stress and illness: Stress and Coping, role of social support in stress, coping and health outcome .Substance use and psychological intervention ,Pain and chronic illness, Methods to measure behavioral change : scale development and validation of a scale by taking examples from existing research, when to use scale , analysis of data gathered using scale;	15
IV	Cultural Epidemiology Framework and respective domains: Cultural identity (Domain I),Illness Explanatory Model (Domain II), key social interpersonal relations (Domain III) and relevant societal structural features of the health systems acknowledging the potential impact of social status and political economy (Domain IV)	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Marks D, Murray M, Brian Evans, Estacio EV, Health Psychology.Delhi: sagepublication, 2011

McDowell Ian, Measuring Health : A guide to relating scales and questionnaires. NewYork: Oxford University Press, 2006.

Scott Kahan, Andrea C. Gielen, Peter J. Fagan, Lawrence W. (eds)Green HealthBehavior Change in Populations. USA: JHU Press, 09-Oct-2014

Karen Glanz, Barbara Rimer and K. Viswanath (eds) Health Behaviour : TheoryResearch and Practice. Jossey-Bass, July 2015

Prestwich,A. Jared Kenworthy , Mark Conner Health Behavior Change: Theories,Methods and Interventions. London and **Newyork: Routledge,** 6 October 2017, ISBN-13: 978-1138694811

Baranowski, T., Perry, C.L., Parcel, G.S. 2002. How Individuals, Environments, andHealth Behavior Interact. In: Glanz, **K., Rimer,**

B.K., Lewis, F.M., editors. Health Behavior and Health Education: Theory, Research, and Practice. 3rd Edition. **San Francisco, CA**: Jossey-Bass. p. 165-184.

Gitlin L., Sara Czaja. Behavioral Intervention Research: Designing, Evaluating, andImplementing . New York: Springer Publishing Company , 2015 ISBN 13 9780826126580

Weiss, M. G., (2017). The promise of cultural epidemiology. Taiwanese Journal ofPsychiatry, 31(1), 8–24.

Weiss M. G. (2018). Cultural Epidemiology: Conceptual framework and current directions of an interdisciplinary field. Bulletin of the Institute of Ethnography SASA

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title. Ageing and Society.	Theory
Course Objectives: 1. To provide an overview of demographic, social, psychological and health issues related to population ageing 2.To expose students to the health status of older adults, disease and disability burden andchallenges to public health due to population ageing		
Credits: 4	**Elective**	**Max Marks** (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**

I	Demographic trends and epidemiological description of the major health problems and issues for older populations, and their implications for public health, Theories of ageing and biology of ageing : Identify the components of usual versus successful aging, behavioral, social and environmental factors that influence successful ageing	15
II	Chronic conditions and Disability in older adults: their implications for public health, functional decline, Fall prevention Nutrition of older adults : frailty , obesity in older adults, Health care services for older adults: strategies to prevent diseases and promote health in elderly. Dementia, Alzheimer's, and other mental health conditions in older adults: Its implications for families and society, Alzheimer's Disease and Caregiving	15
III	Socio-cultural change and social care needs of older adults: Historical shifts in position, family care giving, current social care giving needs of ageing adults, End of life care	15
IV	Policy and Programme for welfare of older adults : Policies and programs from India and around the world that support healthy ageing will be examined.	10
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Prohaska, T.R. Lynda A. Anderson, Robert H. Binstoc, Public Health for anAging Society. USA: JHU Press.
Whitbourne S.K. Adult development and ageing. Biopsychosocial perspectivesJohn Wiley & sons.
Hofer S.M. Duane F Alwin. Ian Stuart Hamilton .An introduction togerontology. UK: Cambridge University Press.
Scott M. 2008. Handbook of cognitive ageing. Interdisciplinary perspectives. USA:Sage publications
Cox, H.G.,& Kahana, E.(2013).*Aging and Human Development (10th ed.)*
Moody, H. R., & Sasser, J. R. Aging: Concepts and Controversies (9th ed.)
Binstock, R. H., & George, L. K. (Eds.). Handbook of Aging and the Social Sciences.

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title. Urbanization and Health	Theory
Course Objectives: To impart knowledge on the determinants of urban health, health care in urban areas, health of vulnerable sections in cities		
Credits: 4	Elective	Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	Course Topic	No. of Lectures Hours

I	Urban population: urban demography, epidemiology, changes in urban physical and social environment and their consequences for health, Urban' as determinant of health: defining health disparities and health equity; the determinants of urban health; locating and understanding health disparities using data, housing, segregation, built environment, food insecurity, violence, and crime,	15
II	Urbanization and health outcome : Emerging public health issues associated with rapid growth of urban population overcoming health inequities in urban settings. Health services in urban areas: health services in urban areas, public health care access and other issues, inadequacy of public health services,	15
III	Health issues of the vulnerable population in urban areas Urban .Health planning: design and implementation of cost-effective health care system	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Galea Sandro, David Vlahov. Handbook of urban health. Populations, methods and practice. USA: Springer publication 2008

Cecilia Tacoli Urbanization, gender and urban poverty: paid work and unpaid carework in the city, Published by UNFPA , March 2012

World Health Organization. Hidden cities: unmasking and overcoming health inequities in urban settings. WHO and United Nations Human Settlements Programme. 2010.ISBN 978 92 4 154803 8 (WHO)

Umar Benna, Urbanization, and its impact on socio-economic growth in developing regions. Published by IGI Global. 2017

The Centre on Housing Rights and Evictions (COHRE), Women, Slums and Urbanisation: Examining the Causes and Consequences. Published by COHRE, Geneva, Switzerland 2008. ISBN: 978-92-95004-42-9.

Peter Ellis and Mark Roberts. Leveraging Urbanization in South Asia Managing Spatial Transformation for Prosperity and Livability. Published by World Bank Group. Washington 2016. ISBN (paper): 978-1-4648-0662-9 ISBN (electronic): 978-1-4648-0663-6 DOI: 10.1596/978-1-4648-0662-9

Suggested Continuous Evaluation Methods:

Continuous internal evaluation through internal tests, quizzes and Presentation.

Explanatory note for semester IV

Semester IV provides students with an insight into the research methodology, managerial and administrative modalities of health service, imparts knowledge on public health emergencies and disastermanagements. It also exposes students to the Health System Management, Public health and disaster management, Environmental effect on occupational health. Students are also introduced to the basic concepts in health economics, bioethics and biosafety

Course code	Title: **Qualitative and Quantitative Research Methods.**	Theory

Course Objectives:

- To introduce students to quantitative research methods in public health includingissues of ethics and biosafety
- To train students in the method of analysis of data and report writing. The information from this course will be subsequently used for planning healthinterventions

Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction to Research- Definition, Types, Strategies & Designs Research Process and Cycle. Descriptive/epidemiological studies–Cross sectional, Operational Research and correlation studies. Analytical Studies-Case control study, Cohort study .	20

	Experimental Studies- Quasi-Experimental Studies & Clinical trials- Introduction to various types and its application, Types of research; steps in conducting research Ethics in research Survey methods and their application to public health research.	
II	Research Methods -Qualitative (Development of conceptual framework, - Qualitative methods: FGDs, in-depth interviews, ethnographies, participatory methods, participant observation etc. Data collection, recording) & Quantitative. Statistical Methods in Public Health Research-Application and Interpretation Survey design and planning, sampling, construction of questionnaire, Data collection, analysis, Report writing. Use of software in research. Application of AI tools in research.	20
	Research Data Collection Tools & Methods-Sampling and survey methods, Sample size, Survey design & Planning, Interview schedule, questionnaire construction, validation etc, Research Data Collection, Management, Coding, procedures Participatory Research and Analysis (PRA), Methods Ethical Aspects in health research. Research paper/Proposal-Formulation, writing & critical review. Bibliography-Review of literature and bibliography	20

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc
Suggested Readings: Health Research Methodology: A guide for training in research methods. SecondEdition. WHO, 2001. Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New AgeInternational. 418p. John Creswell (2013). Research Design: Qualitative, Quantitative, and mixed methods. approaches. Fourth edition, Sage Publications. ICMR, 2016 Ethical Guidelines for Biomedical Research on Human Participants, ICMR,New Delhi Health Research Methods – A Guide for Training in Research Methods, World Health Organization, Manila, 2001 Research Methodology by A.P. Kulkarni Power Publication, Calcutta . Research Methods by Ranjit Kumar. Research Methods by Good & Hatt. Research Methods by P. V. Young. Research Methods by Media research methods by Barrie Gunter.
Suggested Continuous Evaluation Methods: Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title Health System Management	Theory
Course Objectives: • To familiarize students with the challenges of management of health care system inIndia • To familiarize students with the principles and techniques of management		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		

Unit	Course Topic	No. of Lectures Hours
I	Basic knowledge of health care systems and the environment in which health care managers and providers function. Health Programmes: planning, implementation, Monitoring and Evaluation Components of strategic management, Project management.	15
II	Behavioural aspects of governmental, faith based and other non – governmental organizations, Introduction to logistics management, Introduction to human resource management	15
III	Health management information system (HMIS) : health information sources, challenges in HMIS, advantages and lacunas in current system, recommendations to improve utilizationof current HMIS. Brief overview of evolution of management theories and tools and techniques used in HMIS.	15
IV	Quality: define quality, its importance in public health, measures to manage and improve equality, Introduction to Operational Research, Risk management, Public	15

	Health Leadership. Strategic management in Public Health, Organization Behaviour and Design. Human Resource Development Quality &Assurance. Management Information and Evaluation System. Health resources & Management, Total Quality Management & ISO certification of health systems	

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Fallon L F., Eric J Zgodzinski. Public health management. Sundbury, MA: Jones andBarlett.2009.
Lieber J.G. , C. McConnel. Management principles for health professionals. Sundbury,MA: Jones and Barlett. 2010.
Buchbinder, SB, n.H.Shanks. Introduction to health care management. Sundbury,MA: Jones and Barlett. 2007.
Fallon L F., C.McConnell. Human Resource Management in Health care .Sundbury,MA: Jones and Barlett. 2007
Health Care Administration: Planning, Implementing, and Managing Organized Delivery,Systems, Third Edition, by Lawrence Wolper, Jones and Bartlet Publishers International, UK.
Essentials of Public Health Management by L. Fleming Fallon Jr., Eric Zgodzinski, Jones & ,Bartlett Publishers,2011
Health Management by Preeti Oberoi, Sarup & Sons publication

Suggested Continuous Evaluation Methods:
Continuous internal evaluation through internal tests, quizzes and Presentation.

Course code	Title. Public Health and Disaster Outbreaks	Theory
Course Objectives: • To introduce students about the public health disaster management. Psychological impact of disaster on society. And disease outbreak after the outbreaks.		
Credits: 4	**Core Compulsory**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	**Public Health in Outbreaks** Disease outbreaks in India, Outbreak investigations, Epidemic control in India; integrated disease surveillance, legislation for the controlof outbreak in India, International Health Regulations.	15
II	**Disaster management** Introduction to Natural & Man-made Disasters Disaster Preparedness: Disaster Preparedness Plan, Disaster Preparedness for People and Infrastructure, Role of technology in disaster Preparedness, Disaster management: Hazard, Risk	15

	and Vulnerability, Concept and Relationship, disaster Risk Reduction, risk Analysis Techniques, People Participation in Risk Assessment	
III	Disaster Mitigation: Disaster Mitigation Strategies, Emerging Trends in DisasterMitigation, Role of Team, and Coordination, Rehabilitation, Reconstruction & Recovery Disaster Response: Role and responsibilities of different governmental organizationsat local, district, state, and central level.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		
Suggested Readings: Taori, K (2005) Disaster Management through Panchayati Raj, Concept PublishingCompany, New Delhi. Roy, P.S. (2000): Space Technology for Disaster management: A Remote Sensing &GIS Perspective, Indian Institute of Remote Sensing (NRSA) Dehradun. Sharma, R.K. & Sharma, G. (2005) (ed) Natural Disaster, APH Publishing Corporation,New Delhi		

Course code	Title: Bioethics, Biosafety and Regulation	Theory
Course Objectives: • To introduce students to the ethical principles and practices in public health research • To introduce students with the existing guidelines.		
Credits: 2	**Elective course**	**Max Marks** **(Int. + Ext.): 25+75 Total = 100** **Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Public Health laws and ethics, Human rights in public health, Role of governments in managing health of people, Public health regulations in Indian context, Public health information and privacy Introduction to Bioethics – principles and history, Clinical research: clinical research designs, clinical trial, conduct and regulation	15
II	National Ethical Guidelines for biomedical and health research, Regulations for medical devices, drug and biological material regulations	15
III	Research ethics in public health, Regulations during emergencies and outbreaks, Addressing newer	15

	challenges: Bioterrorism, conflicts and emerging infectious, diseases, Public Health laws in global economy, Global health hazards and security Different forms of power, influential to policy making Publication ethics and regulations.	
IV	Concept of governance and institutions, Different theories useful in policy analysis, Political nature of evidence for policy making in health, Written and verbal competence in communicating evidence to inform policy	15

Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc

Suggested Readings:

Class handouts

National Ethical Guidelines for biomedical and health research involving humanparticipants. ICMR, 2017

Guidelines and e-learning tools of Committee of Publication Ethics

CDSCO, 2013. Regulations and Guidelines Specific to Ethics Schedule Y & CDSCO-GCP., Available on www.cdsaindia.in/sites/default/files/02_Regulations_Dr.Bangaruranjan.pdf

CONSORT Checklist-CONSORT statement. 2010. Available on www.consortstatement.org/media/default/downloads/consort2010

The University of Illinois at Chicago. Evidence Based Medicine: PICO. Available onhttp://researchguides.uic.edu.

Course code	Title, Global Health Case studies	Theory
Course Objectives: To learn about health systems and services in high, medium, low income settings		
Credits: 2	**Elective course**	**Max Marks (Int. + Ext.): 25+75 Total = 100 Minimum Marks: 40**
Teaching Hours = Lecture-Tutorial-Practical (L-T-P) : 4-1-0 (Five Hours in a week) or 75 Lecture Hours in a Semester		
Unit	**Course Topic**	**No. of Lectures Hours**
I	Introduction to international health, scope & importance. Socio-cultural perspectives of international health Health Problems, Issues and concerns that transcend national boundaries Policy development in international health, health care, educational and economic development. Globalization-Cultural, Political, Social and economic globalizing processes at work in today's world. Global burden of Diseases-How disease burden is measured and the causes of morbidity and mortality at global scale.	**15**
II	Global Governance-Neoliberal and neorealist regime theory, critical theory approaches, international law, role of corporations and	**15**

	private authority and the activity of global civil society. Public Health in developing & developed countries International Drug Policies & programmes International health legislations-Recruitment laws, Health Insurance Policies, academic equivalence etc. International funding for health care & conditions-Structural Adjustment Program (SAP). International Health Agencies and their role and contribution .	
III	International Public Health Programs- Millennium Development Goals,(MDG) International Health tourism Ethical issues in international health research. Publication ethics and regulations – introduction; fabrication, falsification, or plagiarism; ethics in scientific publications, guidelines and best practices of publications, committee of publication ethics, Guidelines for biosafety, animal ethics, stem cell guidelines, data sharing policies.	15
Teaching Learning Process: Class discussions/ demonstrations, Power point presentations, using e-content, Class activities/ assignments, etc		

Suggested Readings:

Textbook of International Health: Global Health in a Dynamic World By Yogan Pillay, Timothy H. Holtz, 3rd Edition. Oxford University Press.

Textbook of International Health By Paul F. Basch, Oxford University Press Global Health 101, By Richard Skolnik, 2nd Edition, An Introduction to International Health, By Michael Seear, Published by Canadian Scholars Press Inc. Essentials of International Health By Manoj Sharma, Ashutosh Atri, Global Health –Disease, Programmes, Systems and Policies edited by Michael Merson, Robert E, 3rd Edition

Credit	Core compulsory	**Internship**				100			2 Months.
Year		Research submission and Defence of Dissertation	Viva			25			

Research based Activities. **(Research Project.)**

1. Epidemiological Exercise on Water
2. Epidemiological Exercise on epidemiology
3. Medical Important Arthropods.
4. Measurement of morbidity and sickness-rates and ratio's.
5. Measurement of Risk Analysis for various morbidity, mortality and survival.
6. Exercise on Life Tables-Life expectancy at birth and at different ages.
7. Exercise on RCH Logistics
8. Exercises on population trends and growth.
9. Exercises on mortality and fertility- rates and ratios.

10. Formulation of a project proposal on selective topic/problem based on all the concepts of project planning and management learnt in the theory topics.
11. Community Needs Assessment-To conduct the community needs assessment for different stakeholders- Users-Migrant workers, villagers, women, children, tribal , industrial workers, farmers etc. & Doers-Govt., NGO, Private sector etc.
12. Visit to Vector Breeding Places in villages as well as hotels, market place, slaughter,houses, market, livestock shed etc.
13. Visit to district vector control office.
14. Visit to STI Clinics & ART Centre.
15. Visit to rehabilitations homes for mentally sick people.
16. Visit to police stations for collecting data on road traffic accidents and injuries.
17. Visit to Cancer Centre for study of cancer registry and various cancer prevention and treatment facilities.

Internship.

1. Two months' internship will be undertaken by all the candidates during 4th semester with an aim to integrate learning and practice in an active public health organization. This can be undertaken at governmental or non-governmental public health organisations or program management units. The internship should include the candidate's role and support in assessing, monitoring, or conducting surveillance of health problems/services in a population; research on population-based health problems; developing and/or implementing policies and intervention strategies to meet public health needs. Overall, it should contribute to the organization, and should help in understanding public health management and coordination and gaining personal confidence and leadership experience. Although finding a suitable internship opportunity lie with the candidate him/herself, mentors will facilitate the process. After the completion of 2 months of internship, candidates will be expected to submit a brief summary of public health program/challenge dealt with and solution proposed/implemented by the candidate at the end of second semester.
2. Candidates should submit their project plan and preliminary time scale with their chosen topic for dissertation at the end of the internship, after 4th semester to their mentor/tutor to seek appropriate approvals before embarking on the full investigation and project.

DISSERTATION

At the end of the fourth semester, candidates will submit their dissertation on previously chosen and approved topic for assessment. The dissertation will be evaluated by an internal examiner (40% weightage) and an external examiner (60% weightage) and a viva-voce.

Evaluation Pattern.

Total Marks: 100

- Internal Assessment (IA): 25 Marks.
- External Examination: 75 Marks.

Internal Assessment (25 Marks)

Component	Description	Marks
Assignment	A short research proposal or in-depth assignment related to course content,	5
Seminar/Presentation	Oral presentation of literature review, methodology, or findings	5
Class Test	One written class test based on conceptual and applied knowledge	10
Attendance & Participation	Active participation and discussion.	5

External Examination.

Section	Type of Questions	Number of Questions	Marks per Question	Total Marks

A	Very Short Answer (50–100 words)	5 out of 5	3	15
B	Short Answer (150–300 words	2 out of 3	7.5	15
C	Long Answer / Essay (400–500 words)	3 out of 5	15	45

Descriptive Note on the Examination Pattern.

- The syllabus is designed to evaluate both theoretical understanding and practical application skills in a research-based academic environment. The internal assessment promotes continual engagement with the subject matter through research proposals, presentations, and class tests, thereby fostering analytical and communication skills essential for public health or social science research.
- The external examination includes descriptive-type questions that require critical thinking, conceptual clarity, and integration of field-based or literature-supported evidence. The inclusion of short and long answer questions encourages students to reflect on methodologies, data interpretation, ethical considerations, and applied aspects of their field.