MANIPAL
ACADEMY of HIGHER EDUCATION
(Deemed to be University under Section 3 of the UGC Act, 1956)

Department of Health Policy

Prasanna School of Public Health

Manipal Academy of Higher Education, Manipal

Learning Outcomes-based Curriculum Framework (LOCF)

Two-year Full-time Postgraduate Programme

Master of Public Health

MANIPAL
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1. NATURE AND SCOPE OF THE PROGRAM

It is estimated that more than 10, 000 Public Health Professionals would be required on an annual basis to equip the government machinery with an appropriately trained and qualified public health workforce. Currently, India faces two threats in the Public Health sector, one being the rising disease burden, and the other is the poor allocation of government funds. It can be effectively managed by personnel trained in public health through appropriate public health training, i.e., ability to involve communities, work in multidisciplinary teams, and lobbying with government and community leaders with a deep understanding of social, economic and environmental determinants of health; Public Health Professionals are well armed to face these challenges.

The combined rise in chronic, non-communicable diseases and continuing burden of infectious diseases has highlighted the need for strengthened health systems in low-and middle-income countries. A robust health system is necessary if the Sustainable Development Goals (SDGs) are to be achieved; it is also central to designing, implementing and monitoring health programmes; delivering quality health services; and ensuring universal health coverage. Strong health systems will need adequate and well-trained health professionals, and a shortage of health workforce can often be a crucial limiting factor in the delivery of quality health services in low- and middle-income countries.

Public health is a vital part of any health system and is ultimately responsible for reducing health risks and maintaining and improving health status. According to an Institute of Medicine report, public health professionals play a pivotal role in the creation and maintenance of a healthy community. This report defined a public health professional as “a person educated in public health or a related discipline who is employed to improve health through a population focus”. Public health is a fusion of many cross-cutting disciplines, including but not limited to medicine, behavioural and social sciences, statistics, management, communication, environment, nutrition, law, and public policy.

An emerging economy like that of India must plan for adequate access to quality health care for its large population. There is a recognized need to initiate and appropriately strengthen public health education in the country. The Master of Public Health program is a blended learning program where students enrol for two years four-semester course comprising of competency-based learning, fieldwork, assignments, and problem-based learning. The program consists of modules on the basic and advanced level of Epidemiology & Biostatistics, Social & Behavioural Sciences, occupational health, maternal health, and health policy. The two-year master's program also provides an opportunity for the students to pursue an internship to learn the application of theoretical knowledge in practice, be prepared to take up a career in public health, and gain new skills and practices required for specific jobs. Master of Public Health program welcomes graduates from any health science discipline with 60% mark in their final qualifying examinations. Applicants after completing the program get career opportunities in Government health departments, developmental sector, NGOs - International and National, Research organizations and Academic sector.

2. PROGRAM EDUCATION OBJECTIVE (PEO)

The overall objectives of the Learning Outcomes-based Curriculum Framework (LOCF) for **MPH program are as follows.**

PEO No	Education Objective
PEO 1	Students will be able to demonstrate adequate knowledge and skills to a wide range of public health topics and apply the course learning to the public health system and its challenges
PEO 2	Students will be able to develop, implement and evaluate key public health policies and acquire capacity to apply conceptual framework to understand policy processes in health care
PEO 3	Students will be able to demonstrate competency in managing health systems at different levels and identify immediate and long-term health program goals at national, State and district levels
PEO 4	Students will be able to develop competency in research, understand and apply ethical principles in research, evaluation and dissemination and translate research knowledge for evidence-based policy making

3. GRADUATE ATTRIBUTES:

S No.	Attribute	Description
1	**Disciplinary Knowledge**	Knowledge of the various concepts in Public Health for prevention against diseases and for execution of research. Acquiring knowledge of the various components of public health and its relation with other domains of science.
2	**Understanding different subsets of public health**	Policy making for public health challenges, One health concept, Big data analysis, Interdisciplinary approach for public health problems, Epidemiological aspects across specialisations,
3	**Measurable Skills and Health system -ready Professionals**	Situational analysis, Applications in health care, Analysis of public health programs, Public health ethics, Innovative research ideas to achieve SDGs
4	**Effective and Influencing communication**	Verbal and non-verbal skills, Computing sills and analysis, Digital communication platform awareness.
5	**Leadership readiness/ Qualities**	Mobilizing communities to tackle public health challenges, leading public health organisation, key initiatives in public health getting political attention
6	**Critical/ Reflective thinking**	Reasoning, logic, imagination and innovation, creativity-based solutions in all areas of public health
7	**Technologically Efficient Professional**	E-solution to public health challenges to reach the unreached, Technical skills in digital innovations and applications for public and global health
8	**Ethical Awareness**	Public health ethics and ethics in epidemiological research, evaluation and implementation
9	**Lifelong Learning**	Continuous awareness of transition in public health problems, constant updation of digital techniques to apply for public health solutions
10	**Research-related Skills**	Generation of evidence through ethical public health research, Translation of evidence from research into policy,
11	**Cooperation/ Teamwork**	Identification of strategic team members, Team building capacity, team management skills, Multidisciplinary team-based approach.

4. QUALIFICATIONS DESCRIPTORS

1. Demonstrate
    - How to critically conduct the situational analysis and develop action plan for identified public health issues
    - How to Develop workforce for taking public health related responsibilities in defined geographical areas
    - Understanding of the epidemiological transitions of programs specific to each State within the country in order to prioritize public health challenges for policy making
2. Demonstrate comprehension of roles of supply and demand in policy making in health care
3. Demonstrate an understanding to facilitate inter-sectoral coordination and public-private partnership
4. Critically analyse resource allocation for competing public health interests across programs
5. Formulate context based appropriate policies and design programs to address public health challenges and effectively prioritize health issues in population.
6. Describe various managerial information systems and their application and program management plans in health
7. Understand and apply core management principles for human resources in health and program budgeting and economic evaluation
8. Formulate and test research hypotheses in real world scenario.
9. Comprehend and demonstrate and Quality assurance and improvement techniques in health care

5. PROGRAM OUTCOMES:

After successful completion of Master of Public Health, Students will be able to:

PO No	Programme Outcomes	Attributes	Competencies 1	Competencies 2
1	Learning the basic skills of epidemiology and its application	**Domain knowledge**	Demonstrate adequate knowledge and skills to a wide range of public health topics including disease, transmission and control	Develop an understanding of the epidemiological transitions of programs specific to each State within the country in order to prioritize public health challenges for policy making
2	Learning the basic skills, tools and techniques for data management	**Modern tool usage**	Understand and apply quality assurance and improvement techniques in health care	Develop competence to critically evaluate existing information and identify gaps
3	Learning the basic techniques of research methodology	**Research and Ethics**	Understand and apply ethical principles in research, evaluation and dissemination	Formulate and test research hypotheses in real world scenario
4	Learning the systems of health, state and governance	**Design/develop solutions**	Develop workforce for taking public health related responsibilities in defined geographical areas	Translate research knowledge for evidence-based policy making including disaster epidemiology
5	Learning the basics of environmental and occupational health	**Environment and sustainability**	Basic knowledge and skills for environmental health	Basic knowledge and skills for Occupational health
6	Learning the methods of management for improving the health system	**Project management and finance**	Describe program management plans in health	Critically analyse resource allocation for competing public health interests across programs
7	Learning the skills for programme monitoring and evaluation	**Problem analysis**	Understand and apply core management principles for human resources in health	Learn basics of inter-sectoral coordination in animal human interface

8	Applying the epidemiological skills in maternal and child health care	**Conduct investigations of complex problems**	Basic knowledge and skills of reproductive health care	Basic knowledge and skills for maternal and child nutrition
9	Applying the epidemiological skills in Health policy analysis	**Life-long learning**	Develop a capacity to apply conceptual framework to understand policy processes in health care	Develop a capacity to apply conceptual framework to understand policy processes in health care
10	Applying the epidemiological skills in disease surveillance and epidemiological research	**Business and society**	Achieving skills and techniques for disease epidemiology and control	Understand and apply core management principles for human resources in health
11	Learning the immunization system and its monitoring practices	**Domain knowledge**	Describe program management plans in health including immunization	Understand roles of supply and demand in policy making in health care
12	Learning the basics of population science	**Individual / Teamwork**	Basic knowledge and skills related to population movement and demography	Prioritize health issues in population

6. COURSE STRUCTURE, COURSE-WISE LEARNING OUTCOMES AND COURSE OUTCOMES

Subject Code	Subject Title	L	T	P	C
MPH 511	Basic Epidemiology	5		5	3
DDS 518	Introductory Biostatistics for Health Administrators	3		5	2
MPH 512	Environmental and Occupational Health	5		5	3
MPH 521	Applied Epidemiology	5		5	3
DDS 528	Inferential Biostatistics for Health Administrators	3		5	2
MPH 522	Social and Behavioural Sciences and Qualitative Methods	5			2
MPH 671	Health policy approaches in Global Health	2			2
MPH 531	Research Methodology, Data Collection, and Management	12			3
MPH 532	Principles of Communication	12			3
MPH 533	Health Service Administration and Management	24			3
MPH 672	Project design and principles of management in Global Health	2			2
MPH 541.1	Infectious Disease and Surveillance	8			3
MPH 541.2	Basics of Maternal and Child Health	8			3
MPH 541.3	Healthcare Innovation	8			3
MPH 541.4	Environmental and occupational toxicology	8			3
MPH 542	Health Economics	8			3
MPH 543.1	Nutritional Epidemiology	8			3
MPH 543.2	Demography and Population Science	8			3
MPH 543.3	Health system and policy research	8			3
MPH 543.4	Industrial Hygiene and Health	8			3
MPH 551	Public Health Intervention Program Monitoring and Evaluation	8		8	3
MPH 552.1	Chronic Disease and Disability	12			3
MPH 552.2	Policies and legislations in Maternal and Child Health	12			3
MPH 552.3	Healthcare leadership	12			3
MPH 552.4	Environmental Exposure Assessment and Control	12			3
MPH 552.5	Global Public Health in Emergencies	12			3
MPH 561	Certificate course on Global Health Security	8			3
MPH 562	Certificate course on One Health and Animal Human Interface	8			3
MPH 563.1	Clinical Research and Ethics	8			3
MPH 563.2	Global Issues in Maternal and Child Health	8			3
MPH 563.3	Health policy regulations	8			3
MPH 563.4	Occupational and Environmental Safety	8			3
MPH 563.5	Global Health and Anthropology	8			3
MPH 681	Internship			20	4
MPH 699	Project work			30	16

L-Lecture, T-Tutorial, P-Practical

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	**Master of Public Health**
Course Title:	Basic Epidemiology
Course Code: MPH 511	**Course Instructor: Dr Bhumika T V**
Academic Year: 2021- 2022	**Block 1 – First week of Aug to Third week of Sep**
No of Credits: 3	**Prerequisites:** Undergraduate in health science

Synopsis:	The course will provide the fundamental knowledge of various concepts of basic epidemiology. This course will equip students to develop the ability to identify the characteristics of study designs in epidemiology.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Recognize the significance of causation in epidemiology (C2)
CO 2:	Describe the various epidemiologic methods and study designs (C3)
CO 3:	Identify the principles and limitations of public health screening programs. (C2)
CO 4:	Describe a public health problem in terms of magnitude, person, time and place. (C2)

Mapping of COs to POs

COs	*PO 1*	*PO 2*	*PO 3*	*PO 4*	*PO 5*	*PO 6*	*PO 7*	*PO 8*	*PO 9*	*PO 10*	*PO 11*	*PO 12*
CO 1	**x**			**x**	**x**							
CO 2			**x**			**x**			**x**		**x**	
CO 3		**x**										
CO 4	**x**						**x**	**x**		**x**		**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Introductory Biostatistics for health administrators**
Course Code: DDS 518	**Course Instructor: Data Science faculty**
Academic Year: 2020-2021	**Block 1 – First week of Aug to Third week of Sep**
No of Credits: 2	**Prerequisites:** Bachelor's in health science

Synopsis:	This is an introductory level course. The course provides basic concepts of biostatistics, including probability and commonly applied probability distributions. This is a core course for all MPH enrolees. The course starts with describing basic concepts in the theory and practice of biostatistics. Students will be introduced to the basic principles and applications of biostatistics in health science epidemiology and public health. Various scales of measurements, types of variables, and types of will be brought in. Students will be introduced to various statistical methods for summarizing presenting different types of data.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Develop and apply statistical methods to a wide range of topics in biology (C6)
CO 2:	Encompass the design of biological experiments, (C4)
CO 3:	Collection and analysis of data from experiments (C2)
Co 4:	Interpretation of the results (C4)

Mapping of COs to POs

COs	*PO 1*	*PO 2*	*PO 3*	*PO 4*	*PO 5*	*PO 6*	*PO 7*	*PO 8*	*PO 9*	*PO 10*	*PO 11*	*PO 12*
CO 1	**x**			**x**	**x**			**x**			**x**	
CO 2			**x**			**x**	**x**			**x**		**x**
CO 3	**x**				**x**			**x**		**x**		
CO 4		**x**							**x**			

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Environmental and Occupational Health
Course Code: MPH 512	**Course Instructor:** Dr Kumar Sumit
Academic Year: 2021-22	**Block 1 First week of Aug to Third week of Sep**
No of Credits: 2	**Prerequisites:** Undergraduate in health science

Synopsis:	Risk factors related to environment and occupation are a significant cause of the global burden of disease. This course seeks to create a basic understanding of the twin disciplines of Environmental and Occupational Health. It will cover significant issues in Environmental health like pollution of Air and Water, their impact on human health, and measures to reduce them. This course will orient students about major occupational health problems and the various technical, medical and legal measures to tackle them

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	To describe the direct and indirect human, ecological, and safety effects of primary environmental and occupational agents. (C1, A1)
CO 2:	To specify current environmental risk assessment methods (C2)
CO 3:	To describe genetic, physiologic, and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards. (C2, A1)

Mapping of COs to POs

COs	*PO 1*	*PO 2*	*PO 3*	*PO 4*	*PO 5*	*PO 6*	*PO 7*	*PO 8*	*PO 9*	*PO 10*	*PO 11*	*PO 12*
CO 1	x	x		x	x	x		x	x		x	
CO 2			x				x			x		x
CO 3	x				x			x		x		

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Applied Epidemiology**
Course Code: MPH 521	**Course Instructor:** Dr. Prakash Narayanan
Academic Year: 2021-2022	**Block-2:** Fourth week of Sep to First week of Nov
No of Credits: 3	**Prerequisites:** MPH subjects in Block-1
Synopsis:	This course is designed to prepare students to understand the advances concepts of basic epidemiology and biostatistics critically. Students will be introduced to data sets and problem-solving skills. It will instil in students an approach to knowledge building and tasks confronting the research process.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	RECOGNIZE the importance of the concepts related to causation, study designs in epidemiology (C1)
CO 2:	DESCRIBE the bias, validity and reliability of studies (C2)
CO 3:	APPLICATION of the Principles of estimation, and sample size determination, sampling to the given research question (C4)
CO 4:	APPLY the concepts of probability distributions and sampling in description and inference of data including TEST the hypothesis (C4)

Mapping of Cos to POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	x	x		x								
CO 2		x	x		x		x					
CO 3	x				x		x	x	x			
CO 4			x	x		x				x	x	
CO 5		x				x		x		x		x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program	Master of Public Health
Course Title	**Inferential Biostatistics for Health Administrators**
Course Code: DDS 528	**Course Instructor: Dr Vani Lakshmi R**
Academic Year: 2021-2022	**Block 2 – September (Week III) - October (Week IV)**
No of Credits: 2	**Prerequisites:** DDS 518

Synopsis:	The course extends the concepts covered in Introductory Biostatistics for Healthcare Administrators. The concepts covered in the course include an introduction to sampling methods (random and non-random), sampling error and confidence intervals, parametric and non-parametric statistical inference methods, correlation and regression analysis and sample size computation methods. It includes a practical component wherein the students are introduced to open-source software, Jamovi 2.0.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1	Summarize the most-commonly used random and non-random sampling methods. (C2)
CO 2	Illustrate parametric and non-parametric statistical inference methods which are commonly used in health science research. (C3)
CO 3	Illustrate correlation and regression methods which are commonly used in health science research. (C3)
CO 4	Apply the statistical inference, correlation, regression methods on real-life datasets using Jamovi 2.0 (C3)

Mapping of COs to POs

COs	***PO 1***	***PO 2***	***PO 3***	***PO 4***	***PO 5***	***PO 6***	***PO 7***	***PO 8***	***PO 9***	***PO 10***	***PO 11***	***PO 12***
CO 1	**x**						**x**	**x**	**x**			
CO 2	**x**						**x**	**x**	**x**			
CO 3	**x**						**x**	**x**	**x**			
CO 4	**x**	**x**	**x**				**x**	**x**	**x**			

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Social & Behavioural Sciences and qualitative methods
Course Code: MPH 522	**Course Instructor:** Dr Kumar Sumit
Academic Year: 2021-2022	**Block 2 Fourth week of Sep to First week of Nov**
No of Credits: 2	**Prerequisites:** Undergraduate in health science

Synopsis:	This course would provide knowledge and essential skills required for segmenting consumer and business markets. This course will equip students to develop the ability to understand the target marketing concepts. The course will also prepare students with requisite knowledge and application of theories related to segmentation, target marketing, and brand positioning. The course will provide essential knowledge required to understand different competitive environment which will determine the marketing decisions.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Enhanced knowledge of fundamental theories, concepts, and models from a range of social and behavioural disciplines, relevant to public health practices (C1, A1)
CO 2:	Increased knowledge and ability to design, implement and evaluate health promotion interventions (C2)
CO 3:	Improved ability to apply knowledge on ethical principles in public health practice (C1, A1)

Mapping of COs to POs

COs	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO 1	**x**				**x**			**x**	**x**		**x**	
CO 2		**x**	**x**				**x**			**x**		**x**
CO 3	**x**			**x**	**x**	**x**		**x**		**x**		

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Health Policy Approaches in Global Context (Foundation 1)
Course Code: MPH 671	Course Instructor: Maastricht University (MAHE contact-Dr Kumar Sumit)
Academic Year: 2021-2022	**Block-1 & 2**
No of Credits: 2	**Prerequisites:** Undergraduate in health sciences

Synopsis:	Ability to understand and analyze the policies, Programmes in multi-cultural settings. Identify the evolving national institutions, international organizations, NGOs, private organizations, and global partners structuring health policy

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	To develop proposal writing skills (C3, A2)
CO 2:	SUMMARIZE existing evidence (C2, A3)
CO 3:	DEVELOP academic writing skills (C2, A2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x	x	x					x			
CO 2					x		x	x	x	x	x	x
CO 3	x	x	x									

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Research Methodology, Data Collection and Management**
Course Code: MPH 531	**Course Instructor:** Dr. Bhumika T V
Academic Year: 2021-2022	**Module:** Block-3, Second week of Nov to Third week of Dec
No of Credits: 3	**Prerequisites:** Under graduation in health sciences

Synopsis:	This course provides a basic understanding of types of surveys and sampling methods used in public health. Topics covered include survey instruments, data collection methods, and management. Orient students on validating standard data, assessing data quality, applying statistical packages for data entry and data management. This is a core course, common for all MPH enrolees.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	IDENTIFY the major sources of public health data, and their methodology (C2)
CO 2:	COMPREHEND the methods used in public health data collection (C3)
CO 3:	KNOW different types of data collection, sampling methodology, tools for data collection (C3)
CO 4:	DEVELOP tools to collect public health data to answer research questions (C4)
CO 5:	ILLUSTRATE data analysis and INTERPRET the results (C4)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x									x	
CO 2		x	x		x		x	x		x		x
CO 3	x				x				x			x
CO 4			x	x		x						
CO 5		x				x		x		x		x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	**Master of Public Health**
Course Title:	Principles of Communication
Course Code: MPH 532	**Course Instructor: Dr Navya Vyas - SOC faculty**
Academic Year: 2021- 2022	**Block 3 – Second week of Nov to Third week of Dec**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 2
Synopsis:	The course would provide knowledge of concepts and models in health communication and application of the same for promotion of healthy life and overall well-being, including, health promotion and quality assured life.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	RECOGNISE the significance of health communication/ risk communication in public health (C1)
CO2:	DESCRIBE the importance of communication processes, channels and media for changing human behavior (C2, A1)
CO 3:	DESCRIBE the use of communication strategies to inform and influence decisions and actions to improve health (C2)
CO 4:	APPRAISE the models of risk communication for specific outcomes in times of disease and epidemics including emergencies (C3, A1)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x		x					x		x	x	x
CO 2				x					x			
CO 3	x		x		x	x		x		x	x	x
CO 4		x					x					

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Health service Administration and Management
Course Code: MPH 533	**Course Instructor:** Dr. KUMAR SUMIT - MHA Faculty
Academic Year: 2021-2022	**Block 3- Second week of Nov to Third week of Dec**
No of Credits: 3	**Prerequisites:** MPH subjects in Block-1 and Block-2
Synopsis:	A well-functioning administration is the key to success for any organization. The concept of administration is of paramount importance in running a health care institution. This course will impart all the necessary administrative skills to the students to understand the various intricacies in managing an organization.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	To acquire the knowledge, concepts and skills necessary to manage the administration of a healthcare facility (C2)
CO 2:	To critically appraise the functioning of a health system and to suggest measures for administrative improvisation (C2, A3)
CO 3:	To describe the dynamics of strategic planning (C3)
CO 4:	To describe the policies and standards related to hospitals (C2)

Mapping of Cos to POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	x		x						x		x	
CO2		x			x	x		x		x		x
CO3	x		x		x	x			x	x		
CO4		x	x	x			x		x			

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Project design and principles of management of global health (Foundation-2)**
Course Code: MPH 672	**Course Instructor:** Dr Kumar Sumit
Academic Year: 2021-2022	**Block- 3, 4 & 5** • **Second week of Nov to Third week of Dec** • **First week of Feb to Third week of March** • **Fourth week of Mar to First week of May**
No of Credits: 2	**Prerequisites:** MPH subjects in Blocks 1 to 2

Synopsis:	Ability to understand and analyze the policies, Programmes in multi-cultural settings. Identify the evolving national institutions, international organizations, NGOs, private organizations, and global partners structuring health policy

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	To acquire knowledge of and experience with complex project design and basic principles of management in the field of global health. (C3, A2)
CO 2:	To acquire experience with project proposal writing and learn (C2, A3)
CO 3:	To balance between principles of responsive design on the one hand and disease(C2, A2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	**x**	**x**	**x**	**x**					**x**			
CO 2					**x**		**x**	**x**	**x**	**x**	**x**	**x**
CO 3	**x**	**x**	**x**									

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	**Master of Public Health**
Course Title:	Infectious Disease and Surveillance
Course Code: MPH 541.1	**Course Instructor: Navya Vyas**
Academic Year: 2021-2022	Block 4 : First week of Feb to Third week of Mar
No of Credits: 3	**Prerequisites:** MPH subjects in Block-1 to 3
Synopsis:	The course would provide the fundamental knowledge of various concepts of infectious diseases and surveillance and to apply the concepts for control of infectious diseases. This course will prepare students with requisite knowledge to identify the characteristics of a surveillance system
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Recognize the significance of natural history of diseases in prevention and control of communicable diseases (C2)
CO 2:	Describe the role of surveillance system in detection of early warning signals and outbreaks (C1)
CO 3:	Explain the causes of emerging and re- emerging infectious diseases (C2)
CO 4:	Apply epidemiological concepts and measures for control in infectious diseases (C3)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	**x**		**x**		**x**					**x**	**x**	**x**
CO 2				**x**				**x**	**x**			
CO 3						**x**		**x**		**x**		
CO 4		**x**					**x**					

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Basics of Maternal and Child Health
Course Code: MPH 541.2	**Course Instructor:** Dr Arathi P Rao
Academic Year: 2021- 2022	**Block 4 – First week of Feb to Third week of Mar**
No of Credits: 3	**Prerequisites:** MPH Blocks 1 to 3

Synopsis:	This course will introduce the students to the essential concepts of reproductive care with special reference to interventions prioritised for maternal and child health especially in developing countries. The students will be able to perceive the rationale and the justification for the health care services catered to this special population.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	To comprehend the basic concepts of antenatal, intranatal and postnatal care among the mothers. (C2)
CO 2:	To identify the growth and developmental patterns among children and describe the factors influencing the same. (C1)
CO 3:	To comprehend the various interventions for health promotion in maternal and child populations (C2)
CO 4:	To list the morbidity patterns and risk factor assessment and their management in MCH (C1)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	**x**						**x**					
CO 2		**x**	**x**			**x**	**x**	**x**				
CO 3		**x**		**x**		**x**	**x**	**x**	**x**		**x**	**x**
CO 4		**x**			**x**		**x**	**x**		**x**		

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Healthcare innovation**
Course Code: MPH 541.3	**Course Instructor:** Dr. Sanjay Pattanshetty
Academic Year: 2021-2022	**Block 4, First week of Feb to Third week of March**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 3

Synopsis:	Health care innovations is a multidisciplinary, educational approach to prepare students for an innovative and transformative role in healthcare. Students will get a first-hands on experience about leadership, entrepreneurship, application technology to create innovative and transformative solutions to current healthcare challenges. This is a core course for MPH Health Policy specialization.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Comprehend the basic concepts and approaches in innovations in healthcare, and the ability to apply the same in real-time scenario (C3, A2)
CO 2:	Illustrate the various models of health innovations, their application in public health interventions (C2, A1)
CO 3:	DESCRIBE the assessment of innovations, and challenges (C3, A2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x		x							x	
CO 2		x	x		x		x	x		x		x
CO 3	x				x	x			x			

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Environmental and Occupational Toxicology**
Course Code: MPH 541.4	**Course Instructor:** Dr. Raj Narayanan Tiwari
Academic Year: 2021-2022	Block 4 – First week of Feb to Third week of March
No of Credits: 3	**Prerequisites:** MPH Blocks 1 to 3

Synopsis:	The course provides opportunities for students to develop knowledge and understanding of multiple aspects of toxicology and disease processes associated with environmental and occupational exposures and their prevention and control.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	IDENTIFY chemical, physical or biological hazards, encountered in the work environment (C2)
CO 2:	COMPREHEND the assessment of food safety and toxic hazards (C3)
CO 3:	KNOW principles of environmental toxicology with a focus on environmental, industrial, and natural chemicals (C3)
CO 4:	DEVELOP Fundamental understanding of the toxicology of different agents (C4)
CO 5:	ILLUSTRATE routes and nature of exposures evaluate types of toxic effects (C4)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	**x**	**x**									**x**	
CO 2		**x**	**x**		**x**		**x**	**x**		**x**		**x**
CO 3	**x**				**x**				**x**			**x**
CO 4			**x**	**x**		**x**						
CO 5		**x**				**x**		**x**		**x**		**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	**Master of Public Health**
Course Title:	Health Economics
Course Code: MPH 542	**Course Instructor: Dr Navya Vyas – DOC Faculty**
Academic Year: 2021- 2022	**Block 4- First week of Feb to Third week of Mar**
No of Credits: 3	**Prerequisites:** MPH subjects in Block-1, Block-2 and Block-3

Synopsis:	The course would provide fundamental knowledge of various concepts in health economics. The course will prepare students with requisite knowledge to identify the characteristics of economic evaluations in healthcare.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Explain the peculiarities of heath care market – the demand and supply and pricing of healthcare. (C3)
CO 2:	Analyse the cost behaviour and undertake profit analysis (C2, A1)
CO 3:	Explain the different methods of economic evaluations in Healthcare- Cost Minimisation Analysis, Cost Utility Analysis, Cost Effectiveness Analysis and Cost Benefit Analysis (C2)
CO 4:	Describe the market structure for Physicians, Hospitals and Health insurance. (C2)
CO 5:	Describe the role of Government & contemporary issues in Healthcare (C3)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x				x			x				
CO 2				x								
CO 3		x	x			x		x			x	
CO 4				x			x					x
CO 5						x			x	x	x	

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Nutritional Epidemiology
Course Code: MPH 543.1	**Course Instructor:** Dr Navya Vyas
Academic Year: 2021- 2022	Block 4 – First week of Feb to Third week of Mar
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 3
Synopsis:	This course will help the students to understand the inextricable link between nutrition and human health and the various methodologies used to study it. It will also give an overview of major public health problems related to human nutrition health and programmes both international and national, which involve interventions related to it.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	EXPLAIN the overview of the science of human nutrition (C2)
CO 2:	APPRAISE the interlinkage between nutrition and human health and the role of Epidemiology in throwing light on it (C2, A1)
CO 3:	DESCRIBE the various Epidemiological designs in nutritional epidemiology (C1)
CO 4:	DESCRIBE the appropriate tools and methods in nutritional science during research (C2).
CO 5:	DESCRIBE the significant public health problems related to nutrition (C1)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x				x			x	x		x	
CO 2		x	x			x	x			x		
CO 3	x			x	x			x		x		x
CO 4			x		x			x			x	
CO 5		x							x			

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Demography and Population Science**
Course Code: MPH 543.2	**Course Instructor:** Dr. Prakash Narayanan
Academic Year: 2021-2022	**Block-4:** First week of Feb to Third week of March
No of Credits: 3	**Prerequisites:** MPH Blocks 1 to 3

Synopsis:	This course provides the basics of demographic concepts including age pyramids, sex ratio, indicators, fertility and family planning practices, census, etc. The causes of Fertility, Mortality, Migration and Urbanization and their effect on Maternal and child health is explained to students. Major population health indicators, the sources of data, calculation and interpretation of indicators will be explained. This is a core course for MPH Maternal and Child Health Specialization.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Comprehend the demographic concepts and measurements used in epidemiology, and ability to apply the same in real-time scenario (C4, A2)
CO 2:	Illustrate the causes and consequences of high fertility, high infant and maternal mortality, and their application in public health interventions (C3, A2)
CO 3:	Understand the factors and effects of migration and urbanization in public health (C3)
CO 4:	Application of demographic techniques and measurements in public health interventions and programmes (C4, A2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x									x	
CO 2		x	x		x		x	x		x		
CO 3	x				x				x			
CO 4		x	x	x		x		x	x	x		x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Health System and Policy Research**
Course Code: MPH 543.3	**Course Instructor:** Dr. Sanjay Pattanshetty
Academic Year: 2021-2022	**Block 4, First week of Feb to Third week of March**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 3

Synopsis:	Considering the importance of sound policymaking in the Health system and to encourage high-quality research it is important to train the Public health graduates in Health system and policy research. The trained professionals should be able to handle the diverse nature of the health system and policies in different cultural, socio-economic and socio-political systems. This is a core course for MPH Health Policy specialization.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	DISCUSS the importance of building blocks of healthcare systems, research and policy (C2, A1)
CO 2:	DESCRIBE different types of health system, health reforms and policy research and its applications (C2, A1)
CO 3:	EXPLAIN the Policy cycle, application and policy analysis in the context of health systems and policy research (C3, A2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x							x			x	
CO 2		x	x	x	x		x	x		x		x
CO 3			x		x	x			x	x	x	x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Industrial Hygiene and Health**
Course Code: MPH 543.4	**Course Instructor:** Dr. Raj Narayanan Tiwari
Academic Year: 2021-2022	Block 4 – First week of Feb to Third week of March
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 3

Synopsis:	Students will be introduced to the fundamental aspects of the science and practice of industrial hygiene. Student will know how to recognize, evaluate, control workplace pollutants, and PPE, engineering control, and administrative control that can be used for their control.The development, application, and limitations of occupational health guidelines and standards will be considered. Emerging problems will be identified and discussed. The roles of the industrial hygienist and other members of the occupational safety and health team, industrial hygiene professional organizations, government regulatory agencies and consensus standard organizations will be presented.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	IDENTIFY the direct and indirect human, ecological effects of major industrial and occupational agents (C2)
CO 2:	COMPREHEND approaches for assessing, preventing, and controlling industrial hazards(C3)
CO 3:	KNOW strategies to address environmental injury in the context of occupational and industrial setting (C3)
CO 4:	DEVELOP federal and state regulatory programs, guidelines, and authorities that control occupational and industrial health and safety issues (C4)
CO 5:	ILLUSTRATE the genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to occupational and industrial hazards(C4)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x									x	
CO 2		x	x		x		x	x		x		x
CO 3	x				x				x			x
CO 4			x	x		x						
CO 5		x				x		x		x		x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Public Health Intervention, Programs Monitoring and Evaluation**
Course Code: MPH 551	Course Instructor: Dr. Prakash Narayanan
Academic Year: 2021-2022	Block-5: Fourth week of Mar to First week of May
No of Credits: 3	Prerequisites: MPH subjects in Blocks 1 to 4
Synopsis:	This course will describe various types of public health interventions, principles of monitoring and evaluation of health programmes, and enable them to formulate M&E frameworks for projects/programmes
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	IDENTIFY the major public health interventions, their goals, objectives, and M&E indicators (C2, A2)
CO 2:	DESCRIBE the methods to evaluation public health interventions, data collection methods (C2, A2)
CO 3:	APPRAISE different types of frameworks used to develop health interventions and measuring input, process, output, outcome and impact of interventions (C4, A3)
CO 4:	DESCRIE the use of Data Triangulation and implementation of Health Management Information Systems (C2, A2)
CO 5:	EXPLAIN types of evaluations – outcome evaluation, impact evaluation, environment impact assessment, and participatory approaches in evaluations (C2, A2)

Mapping of COs to POs

COs	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO 1					**x**		**x**	**x**		**x**		**x**
CO 2	**x**	**x**	**x**					**x**	**x**		**x**	
CO 3					**x**			**x**				
CO 4		**x**	**x**					**x**		**x**		**x**
CO 5				**x**		**x**	**x**	**x**	**x**	**x**	**x**	**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Chronic diseases and disability
Course Code: MPH 552.1	**Course Instructor:** Dr. Kumar Sumit
Academic Year: 2021-22	**Semester:** Block 5-Fourth week of Mar to First week of May
No of Credits: 3	**Prerequisites:** MPH Blocks 1 to 4
Synopsis:	The course will orient the students on the various chronic diseases and their burden affecting the human population in a global context. There has been a paradigm shift in the recent past from communicable to non-communicable diseases. The disabilities associated with chronic diseases affect health status as well as the overall economy of the nation
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	To describe causes and burden of NCDs. (C2)
CO 2:	To explain the various methods of detection and management of NCDs (C3)
CO 3:	To describe the preventive measures for NCDs. (C2)
CO 4:	To explain the impact of chronic diseases on the human population (C4)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x			x	x	x		x			x	
CO 2		x	x				x			x		x
CO 3	x				x	x		x	x	x		
CO 4			x		x			x	x			

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Policies and Legislations in Maternal and Child Health**
Course Code: MPH 552.2	**Course Instructor:** Dr Arathi P Rao
Academic Year: 2021-2022	Block 5 – Fourth week of Mar to First week of May
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 4
Synopsis:	The subject of policies and legislation in Maternal and child health will acquaint the students with the various laws and principles put up by the administrating bodies and laws of the land to ensure access, availability, affordability and acceptability of maternal and child health services to ensure optimal performance from the provider as well as the receiver's end.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	DESCRIBE the policies on mother and child health (C2)
CO 2:	APPRAISE the national health policies and programs related to MCH (C3)
CO 3:	OUTLINE the important components considered while designing MCH schemes and policies (C2)
CO4:	EXPLAIN the difference between policies and legislations and their requirements for ensuring maternal and child health services (C2)

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO11	PO12
CO 1	**x**				**x**			**x**			**x**	
CO 2		**x**	**x**	**x**		**x**	**x**		**x**	**x**		**x**
CO 3	**x**				**x**			**x**		**x**	**x**	
CO4		**x**				**x**			**x**			**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Health care leadership**
Course Code: MPH 552.3	**Course Instructor:** Dr Sanjay Pattanshetty
Academic Year: 2021-2022	**Block 5- Fourth week of Mar to First week of May**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 4

Synopsis:	This course will describe the role of leadership, leadership and management competencies, principles and practices, types of leaderships, designing and communicating leadership strategies, and their applications in public health. This covers the leadership skills development in effective management of team, stakeholders and conflict management in public health systems.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	RECOGNIZE the roles, competencies, and guiding principles and practices of leadership in public health (C1, A1)
CO 2:	DEMONSTRATE the roles and responsibilities of a leader, leadership approaches applicable to various public health problems and institutions (C3, A1)
CO 3:	DESCRIBE the application of systems thinking framework and modelling for public health practice and healthcare leadership (C2, A1)
CO 4:	IDENTIFY appropriate leadership strategies for various public health scenarios, and communicating during public health crisis (C1, A1)
CO 5:	ILLUSTRATE required leadership skills for effective management of team, stakeholders and conflict management in public health systems (C3, A2)

Mapping of COs to POs

COs	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO 1				**x**							**x**	
CO 2				**x**						**x**		**x**
CO 3				**x**	**x**		**x**	**x**	**x**		**x**	**x**
CO 4				**x**	**x**	**x**		**x**		**x**	**x**	**x**
CO 5	**x**	**x**	**x**	**x**			**x**		**x**			**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Environmental Exposure Assessment and Control**
Course Code: MPH 552.4	**Course Instructor:** Dr. Raj Narayanan Tiwari
Academic Year: 2021-2022	Block 5– Fourth week of Mar to First week of May
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 4
Synopsis:	The course content delves into the understanding of various environmental ambiance pollutions, their hazards and how they can be controlled. The student will be able to analyze the hazards of this environmental pollution and derive how they can be ameliorated. Basic concepts, historical perspective, observation and collection of environmental samples and testing will be discussed. Theory and practice of analytical methods used in the study of environmental sciences; data quality of objectives, instrumental and wet chemical techniques used in measurement of environmental quality parameters and contaminants
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	IDENTIFY Impact of environmental exposures and their control methodologies (C2)
CO 2:	COMPREHEND the various techniques for control of environmental pollution (C3)
CO 3:	KNOW the used of the monitoring equipments and calibration techniques for measurement of environmental exposure (C3)
CO 4:	DEVELOP the ability to analyze the hazards of the environmental pollution and (C4)
CO 5:	ILLUSTRATE routes and nature of exposures evaluate types of toxic effects in the environment (C4)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x									x	
CO 2		x	x		x		x	x		x		x
CO 3	x				x				x			x
CO 4			x	x		x						
CO 5		x				x		x		x		x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	**Master of Public Health**
Course Title:	Global Public Health in Emergencies
Course Code: MPH 552.5	**Course Instructor: Dr Navya Vyas**
Academic Year: 2021-2022	Block 5 – Fourth week of Mar to First week of May
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 2
Synopsis:	The course would provide the knowledge of various concepts in public health emergencies and application of the same for the management of emergencies including outbreaks of infectious diseases, environmental hazards, nuclear disasters and radiological disasters and preparedness readiness for the same.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Recognize the significance of management of outbreaks of infectious diseases, environmental hazards, nuclear disasters and radiological disasters (C2)
CO2:	Describe the significance of incident command system for disaster mitigation (C2)
CO 3:	Appraise the significance of intersect oral coordination between public health and security forces during a disaster (C2)
CO 4:	Describe the functioning of surveillance systems across the globe (C2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x		x					x		x	x	x
CO 2				x	x	x		x	x	x		x
CO 3	x	x	x		x	x	x	x	x	x		x
CO 4		x	x				x					

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	**Master of Public Health**
Course Title:	Certificate course on Global Health Security
Course Code: MPH 561	**Course Instructor:** Navya Vyas
Academic Year: 2021-2022	**Block 6 – Second week of May to Third week of June**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 5
Synopsis:	The course would provide the fundamental knowledge of various concepts of global health security. The course will also prepare students with requisite knowledge to identify the importance of International Health Regulations in global health security.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	Describe the concepts of biosafety, biosecurity and one health (C2)
CO 2:	Describe the reasons for sudden upsurge in the Emerging Infectious Diseases (EID) in recent past (C2)
CO 3:	Describe about the different EIDs including their mode of transmission, incubation period and preventive measures (C1)
CO 4:	Analyse the significance of the policy framework for global health security and highlight how International Health Regulations (IHR), is providing a unique legally binding framework to address international coordination to prevent, detect and respond to public health threats. (C3, A1)
CO 5:	Describe the significance of and introduction of Global Health Security Agenda (GHSA) and the action packages constituted in it (C2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x		x									
CO 2		x										x
CO 3					x			x				
CO 4				x		x	x		x		x	
CO 5										x		

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Certificate course on One Health and Animal Human Interface**
Course Code: MPH 562	**Course Instructor:** Dr. Prakash Narayanan
Academic Year: 2021-2022	**Block-6:** Second week of May to Third week of June
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 5

Synopsis:	The course will orient the students on One-health approach, and its importance in public health. Students will understand the disease transmission dynamics between human and animals, preventive and control measures for animal-human disease transmission, outbreak investigations and research in human-animal interactions and disease transmissions. This is a core course for MPH Global Health specialization.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	COMPREHEND the basic concepts and approaches in One-health, and ability to apply the concepts in the detection, control and prevention of human-animal infections (C3, A2)
CO 2:	UNDERSTAND the management and prevention of disease transmission between human beings and livestock animals (C2, A2)
CO 3:	ILLUSTRATE data analysis and summarization of results (C3, A2)
CO 4:	DESIGN animal health survey, DEVELOP tools for data collection, and TEST the hypothesis (C4, A3)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x		x							x	
CO 2		x	x		x		x	x		x		x
CO 3	x				x	x					x	
CO 4	x		x			x			x	x		x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Clinical research and Ethics
Course Code: MPH 563.1	**Course Instructor:** Dr Prakash Narayanan
Academic Year: 2021-2022	**Block-6:** Second week of May to Third week of June
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 5

Synopsis:	The course on Clinical research and Public health research ethics enables Public Health graduates to understand the vital research methodology. The trained students will be able to conceptualize clinical trials and skills to design, manage, analyse, and report clinical research.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	EXPLAIN theoretical and practical understanding of the issues involved in the design, conduct, analysis, and interpretation of clinical research (C2, A2)
CO 2:	DESCRIBE the guidelines related to international regulations, good clinical practices, and ethical practices in clinical research (C2, A2)
CO 3:	ILLUSTRATE randomization and Grant proposal preparation and documentation for Ethical clearances (C3, A2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	**x**	**x**			**x**			**x**	**x**		**x**	
CO 2			**x**	**x**		**x**	**x**			**x**		**x**
CO 3	**x**				**x**			**x**		**x**		

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	Global Issues in Maternal and Child Health
Course Code: MPH 563.2	**Course Instructor:** Dr P Arathi Rao
Academic Year: 2021-2022	**Block 6 – Second week of May to Third week of June**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 5

Synopsis:	This course enables the student to comprehend the various health issues related to maternal and child health across the globe. This module will also inform the students the various initiatives taken to enhance women and child. Newly developed immunization strategies, emphasis on adolescent health and advanced maternal care has enabled developed nations to achieve a significant progress and sustenance in health indices. Improvement of health in the developing nations through a continuum of care has been the agenda for WHO and they have come up with various strategies for intervention.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	DESCRIBE the significance of integration of MCH services for the better implementation of the program in different settings (C1) .
CO 2:	EXPLAIN the importance of MCH care as an indispensable priority element for the attainment of SDG (C2)
CO 3:	APPRAISE the various health issues and circumstances that can cause mortality and morbidity among women and under 5 children in various countries (C3)
CO 4:	ILLUSTARTE the factors affecting adolescent health in a global context and to understand the various strategies designed to combat it. (C3).
CO 5:	DESCRIBE the recent technological advances in maternal and child health in developed and developing countries (C2)

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x			x	x		x			x	
CO 2			x	x			x			x		x
CO 3	x			x	x	x		x	x	x		x
CO 4		x	x		x			x			x	
CO 5			x		x			x	x			

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Health policy regulations**
Course Code: MPH 563.3	**Course Instructor:** Dr Sanjay Pattanshetty
Academic Year: 2021-2022	**Block: 6- Second week of May to Third week of June**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 5

Synopsis:	This course will explain the role and importance of policy regulations in public health, the frameworks within which health policies being made, the legal and community determinants of policy regulations, the role of law and governance in policy regulations, and challenges and future of public health policy regulations in Indian and Global context.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	RECOGNIZE the roles, importance, and frameworks public health policy regulations (C2, A1)
CO 2:	Illustrate the determinants of policy regulations, and the steps to develop and implement policies, the roles and responsibilities of a leader, leadership approaches applicable to various public health problems and institutions (C3, A1)
CO 3:	DESCRIBE the international/global regulations and policies measures to support their implementations (C2, A1)
CO 4:	REVIEW how health policy regulations are being influenced in different sectors, and their implications (C2, A1)
CO 5:	ILLUSTRATE the challenges in adopting policy regulation measures for digital and technological advancements in public health (C2, A1)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1											**x**	**x**
CO 2		**x**	**x**		**x**					**x**		**x**
CO 3	**x**		**x**			**x**		**x**	**x**		**x**	**x**
CO 4			**x**	**x**			**x**	**x**		**x**		**x**
CO 5		**x**				**x**	**x**		**x**			**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Occupational and Environmental Safety**
Course Code: MPH 563.4	**Course Instructor:** Dr. Raj Narayanan Tiwari
Academic Year: 2021-2022	Block 6– Second week of May to Third week of June
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 5

Synopsis:	This course will consider the range of impacts on human health, safety and welfare arising from work activities. Effective interventions will be explored in relation to a variety of hazards and the legislation that controls them. Consideration is also given to accidents and ill-health within the workplace, understanding causation and appropriate control measures as well as proactive and reactive monitoring techniques and establishing occupational health surveillance system. Specific causes of ill-health will be considered in detail.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	IDENTIFY appropriate approaches to prevention, management and resolution of problems (C2)
CO 2:	COMPREHEND occupational safety and health issues (C3)
CO 3:	KNOW the methods of acquiring, interpreting and analyzing information and data with a critical understanding of the appropriate contexts for their use in practice (C3)
CO 4:	DEVELOP approaches to prevention, management and resolution of environmental and occupational health problems C4)
CO 5:	ILLUSTRATE occupational safety and health programs (C4)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	**x**	**x**									**x**	
CO 2		**x**	**x**		**x**		**x**	**x**		**x**		**x**
CO 3	**x**				**x**				**x**			**x**
CO 4			**x**	**x**		**x**						
CO 5		**x**				**x**		**x**		**x**		**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	**Master of Public Health**
Course Title:	Global Health and Anthropology
Course Code: MPH 563.5	**Course Instructor: Dr Kumar Sumit**
Academic Year: 2021-2022	**Block-6: Second week of May to Third week of June**
No of Credits: 3	**Prerequisites:** MPH subjects in Blocks 1 to 5
Synopsis:	The course would provide the learner with concepts and skills of social and medical anthropology and application of the same for management of global health issues.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	RECOGNISE the basic approaches of social and medical anthropology in addressing the global health issues (C2)
CO2:	DESCRIBE the disparities, in-equalities, quality of life and its influence on global health (C3)
CO 3:	APPRAISE the significance of social determinants and inter-twined dynamics/forces of socio-cultural, socio-economic and socio-political issues in global health (C3, A2)
CO 4:	DESCRIBE the influence of anthropological issues in health system, illness and the society (C2)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x	x			x	x	x		x	x	
CO 2				x					x			x
CO 3	x				x	x		x		x		
CO 4		x	x	x	x		x	x	x		x	x

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Internship**
Course Code: MPH 681	**Course Instructor:** Dr Prakash Narayanan
Academic Year: 2021-2022	**Second year – August - September**
No of Credits: 4	**Prerequisites:** Attended previous MPH Blocks
Synopsis:	The aim of the course is to provide a meaningful learning environment and opportunities to learn about public health in India outside a classroom. The course enables a student to learn more about their chosen career path in public health. The experience and skills developed through this observational internship can help the students enhance their understanding in public health research and functioning and management of public health programmes.
Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	SUMMARIZE the functioning and management of a public health programme/organization (C2, A2)
CO 2:	DEVELOP skills to do public health research (C5, A3)
CO 3:	ANALYSE the strength and weakness of a public health program, public health institution (C4, A2)
CO 4:	PREPARE an internship report (C3, A2)

Mapping of COs to POs

COs	*PO 1*	*PO 2*	*PO 3*	*PO 4*	*PO 5*	*PO 6*	*PO 7*	*PO 8*	*PO 9*	*PO 10*	*PO 11*	*PO 12*
CO 1	**x**	**x**	**x**	**x**					**x**			
CO 2					**x**		**x**	**x**	**x**	**x**	**x**	**x**
CO 3	**x**	**x**	**x**									
CO 4	**x**	**x**	**x**			**x**	**x**					**x**

Name of the Institution / Department:

DEPARTMENT OF HEALTH POLICY, PRASANNA SCHOOL OF PUBLIC HEALTH

Name of the Program:	Master of Public Health
Course Title:	**Project work**
Course Code: MPH 699	**Course Instructor:** Dr. Prakash Narayanan
Academic Year: 2021-2022	**Second year:** October-July
No of Credits: 16	**Prerequisites:** MPH modules Blocks 1 to 6 and Internship

Synopsis:	The course will capacitate the students to Integrate theoretical knowledge into practice. Students will apply the learnings from three semesters for a public health issue they identified. They Apply their learnings to conceptualize a research problem, generate research questions and hypotheses, formulate tools, select an appropriate methodology for data collection, analyse data, Summarize the findings, and Prepare a manuscript preparation. The experience and skills develop through this activity help the students to engage in research, monitoring and evaluation as well as management of public health programmes later.

Course Outcomes (COs):	On successful completion of this course, students will be able to
CO 1:	FORMULATE hypothesis/research questions (C4, A2)
CO 2:	SUMMARIZE existing evidence (C5, A3)
CO 3:	DEVELOP appropriate methodology and study tools (C5, A2)
CO 4:	ANALYSE results, and develop Manuscript from their research (C4, A2)
CO 5:	PREPARE dissertation / research report (C5, A3)

Mapping of COs to POs

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	x	x	x	x					x			
CO 2					x		x	x	x	x	x	x
CO 3	x	x	x									
CO 4	x	x	x			x	x					x
CO 5				x		x	x		x			x

7. PROGRAM OUTCOMES (POs) AND COURSE OUTCOMES (COs) MAPPING

Course Code	Course Name	Credits	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MPH 511	Basic Epidemiology	3	C01, C04	CO3	C02, C03	C01	C01	C2	C04	C04	C02	C02, C04	CO2	C04
DDS 518	Introductory Biostatistics for Health Administrators	2	C01, C03	CO4	C02	CO1	C01, C03, C04	CO2	C02	C01, C03	C05	C02, C03	C01	C02
MPH 512	Environmental and Occupational Health	3	C01, C03	CO1	C02	CO1	C01, C03	CO1	C02	C01, C03	CO1	C02, C03	C01	C02
MPH 521	Applied Epidemiology	3	CO1, CO3	CO1, CO2, CO5	CO2, CO4	CO1, CO4	CO2, CO3	CO4, CO5	CO2, CO3	CO3, CO5	CO3	CO4, CO5	CO4	CO3, CO5
DDS 528	Inferential biostatistics for health administrators	2	C01, C03	CO4	C02	CO1	C01, C03, C04	CO2	C02	C01, C03	C05	C02, C03	C01	C02
MPH 522	Social and Behavioural Sciences and Qualitative Methods	2	C01, C03	CO2	C02	CO3	C01, C03	C03	C02	C01, C03	CO1	C02, C03	C01	C02
MPH 671	Health policy approaches in global context	2	CO1, CO3	CO1, CO3	CO1, CO3	CO4, CO1	CO5, CO2		CO7, CO2	CO8, CO2	CO9, CO1, CO2	CO10, CO2	CO11, CO2	CO2

MPH 531	Research Methodology, Data Collection, and Management	3	CO1, CO3	CO1, CO2, CO5	CO2, CO4	CO4	CO2, CO5	CO4, CO5	CO2	CO2, CO8	CO9	C05	CO1, CO5	CO2, CO3, CO5
MPH 532	Principles of Communication	3	CO1, CO3	CO4	CO1, CO3,	CO2	CO3	CO3	CO4	CO1, CO3	CO2	CO1, CO3	CO1, CO3	CO1, CO3
MPH 533	Health Service Administration and Management	3	CO1, CO3	CO2, CO4	CO1, CO3, CO4	CO4	CO2, CO3	CO4	CO2	CO1, CO3, CO4	CO1	CO2, CO3	CO1	CO2
MPH 672	Project design and principles of management of global health	2	CO1, CO3	CO1, CO3	CO1, CO3	CO1	CO2		CO7, CO2	CO2	CO1, CO2	CO2	CO2	CO2
MPH 541.1	Infectious Disease and Surveillance	3	CO1	CO4	CO1	CO2	CO1	CO3	CO4	CO2, CO3	CO2	CO1, CO3	CO1	CO1
MPH 541.2	Basics of Maternal and Child Health	3	CO1, CO3	CO1, CO2,	CO2, CO4	CO4	CO2, CO3	CO4	CO2	CO2, CO4	CO3, CO4	CO2, CO4	CO1	CO4
MPH 541.3	Healthcare Innovation	3	CO1, CO3	CO1, CO2	CO2	CO1	CO2, CO3	CO3	CO2	CO2	CO3	CO2	CO1	CO2
MPH 541.4	Environmental and occupational toxicology	3	CO1, CO3	CO1, CO2, CO5	CO2, CO4	CO4	CO2, CO3	CO4, CO5	CO2	CO2, CO5	CO3	CO2, CO5	CO1	CO2,CO3,CO5
MPH 542	Health Economics	3	CO1	CO3	CO3	CO2, CO4	CO1	CO3, CO5	CO4	CO1, CO3	CO5	CO5	CO3, CO5	CO4

MPH 543.1	Nutritional Epidemiology	3	CO1, CO3	CO2, CO5	CO2, CO4	CO3	CO1, CO3, CO4	CO2	CO2	CO1, CO3, CO4	CO1, CO5	CO2, CO3	CO1, CO4	CO3
MPH 543.2	Demography and Population Science	3	CO1, CO3	CO1, CO2, CO4	CO2, CO4	CO4	CO2, CO3	CO4	CO2	CO2, CO4	CO3, CO4	CO2, CO4	CO1	CO4
MPH 543.3	Health System and policy research	3	CO1	CO2	CO2, CO3	CO2	CO2, CO3	CO3	CO2	CO1, CO2	CO3	CO2, CO3	CO1, CO3	CO2, CO3
MPH 543.4	Industrial hygiene and health	3	CO1, CO3	CO1, CO2, CO5	CO2, CO4	CO4	CO2, CO3	CO4, CO5	CO2	CO2, CO5	CO3	CO2, CO5	CO1	CO2,CO3,CO5
MPH 551	Public Health Intervention Program Monitoring and Evaluation	3	CO2	CO2, CO4	CO2, CO4	CO5	CO1, CO3	CO5	CO1, CO5	CO1, CO2, CO3, CO4, CO5	CO2, CO5	CO1, CO4, CO5	CO2, CO5	CO1, CO4, CO5
MPH 552.1	Chronic Disease and Disability	3	CO1, CO3	CO2	CO2, CO4	CO1	CO1, CO3, CO4	CO1, CO3	CO2	CO1, CO3, CO4	CO3, CO4	CO2, CO3	CO1	CO2
MPH 552.2	Policies and Legislations in Maternal and Child Health	3	CO1, CO3	CO2, CO4	CO2	CO2	CO1, CO3	CO4	CO2	CO1, CO3	CO4	CO2, CO3	CO1, CO3	CO2, CO4

MPH 552.3	Healthcare Leadership	3	CO5	CO5	CO5	CO1, CO2, CO3, CO4, CO5	CO3, CO4	CO4	CO3, CO5	CO3, CO4	CO3, CO5	CO2, CO4	CO1, CO2, CO3, CO4	CO2, CO3, CO4, CO5
MPH 552.4	Environmental exposure assessment and control	3	CO1, CO3	CO1, CO2, CO5	CO2, CO4	CO4	CO2, CO3	CO4, CO5	CO2	CO2, CO5	CO3	CO2, CO5	CO1	CO2,CO3,CO5
MPH 552.5	Global Public Health in Emergencies	3	CO1, CO3	CO3, CO4	CO1, CO3, CO4	CO2	CO2, CO3	CO2, CO3	CO3, CO4	CO1, CO2, CO3	CO2, CO3	CO1, CO2, CO3	CO1	CO1, CO2, CO3
MPH 561	Certificate course on Global Health Security	3	CO1	CO2	CO1	CO4	CO3	CO4	CO4	CO3	CO4	CO5	CO4	CO2
MPH 562	Certificate course on One Health and Animal Human Interface	3	CO1, CO3, CO4	CO1, CO2	CO2, CO4	CO1	CO2, CO3	CO3, CO4	CO2	CO2	CO4	CO2, CO4	CO1, CO3	CO2, CO4
MPH 563.1	Clinical Research and Ethics	3	CO1, CO3	CO1	CO2	CO2	CO1, CO3	CO2	CO2	CO1, CO3	CO1	CO2, CO3	CO1	CO2
MPH 563.2	Global issues in Maternal and Child Health	3	CO1, CO3	CO1, CO4	CO2, CO4, CO5	CO2, CO3	CO1, CO3, CO4, CO5	CO1, CO3	CO2	CO1, CO3, CO4, CO5	CO3, CO5	CO2, CO3	CO1, CO4	CO2, CO3

MPH 563.3	Health Policy Regulations	3	CO3	CO2, CO5	CO2, CO3, CO4	CO4	CO2	CO3, CO5	CO4, CO5	CO3, CO4	CO3, CO5	CO2, CO4	CO1, CO3	CO1, CO2, CO3, CO4, CO5
MPH 563.4	Occupational and environmental safety	3	CO1, CO3	CO1, CO2, CO5	CO2, CO4	CO4	CO2, CO3	CO4, CO5	CO2	CO2, CO5	CO3	CO2, CO5	CO1	CO2,CO3,CO5
MPH 563.5	Global Health and Anthropology	3	CO1, CO3	CO1, CO4	CO1, CO4	CO2, CO4	CO3, CO4	CO1, CO3	CO1, CO4	CO1, CO3, CO4	CO2, CO4	CO1, CO3	CO1, CO4	CO2, CO4
MPH 681	Internship	4	CO1, CO3, CO4	CO1, CO3, CO4	CO1, CO3, CO4	CO1, CO5	CO2	C04, CO5	CO2, C04, CO5	CO2	CO1, CO2, CO5	CO2	CO2	CO2, CO4, CO5
MPH 699	Project work	16	CO1, CO3, CO4	CO1, CO3, CO4	CO1, CO3, CO4	CO1, CO5	CO2	C04, CO5	CO2, C04, CO5	CO2	CO1, CO2, CO5	CO2	CO2	CO2, CO4, CO5