

PH.D. PRE-COURSE WORK EXAMINATION SYLLABUS

Paper II: Recent Advances in Public Health

Sr. No.	Topic	Details	Hours
1	Advanced Epidemiological Methods	<ul style="list-style-type: none"> - Causal inference in epidemiology - Molecular and genetic epidemiology - Spatial epidemiology and GIS applications - Social network analysis in disease transmission 	3
2	Global Health Security	<ul style="list-style-type: none"> - Emerging and re-emerging infectious diseases - Pandemic preparedness and response - One Health approach to zoonotic diseases - Bioterrorism and public health preparedness 	3
3	Environmental Health and Climate Change	<ul style="list-style-type: none"> - Climate change impacts on public health - Environmental exposome and human health - Green technologies for environmental health - Health impact assessment of environmental policies 	3
4	Digital Public Health	<ul style="list-style-type: none"> - Big data analytics in population health - Artificial intelligence in disease surveillance - Mobile health interventions - Telemedicine and remote healthcare delivery 	3
5	Health Systems Strengthening	<ul style="list-style-type: none"> - Universal health coverage strategies - Health workforce development - Health information systems and interoperability - Quality improvement in healthcare delivery 	3
6	Non-Communicable Disease Prevention	<ul style="list-style-type: none"> - Precision public health approaches - Behavioral economics in lifestyle interventions - Multi-sectoral strategies for NCD control - Global mental health initiatives 	3
7	Health Equity and Social Determinants	<ul style="list-style-type: none"> - Intersectionality in health disparities research 	3

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		<ul style="list-style-type: none"> - Community-based participatory research methods - Structural determinants of health inequities - Policy interventions for health equity 	
8	Implementation Science	<ul style="list-style-type: none"> - Frameworks for implementation research - Adaptation and scale-up of evidence-based interventions - Mixed methods in implementation studies - Evaluation of complex public health interventions 	3
9	Global Health Diplomacy	<ul style="list-style-type: none"> - Health in all policies approach - Sustainable Development Goals and health - Global health governance structures - Trade agreements and public health 	3
10	Health Economics and Financing	<ul style="list-style-type: none"> - Economic evaluation of public health programs - Innovative financing mechanisms for health - Behavioral economics in health policy - Resource allocation and priority setting in healthcare 	3
11	Public Health Ethics	<ul style="list-style-type: none"> - Ethical issues in public health surveillance - Vaccination ethics and policy - Ethical considerations in health promotion - Privacy and confidentiality in the age of big data 	3
12	Translational Research in Public Health	<ul style="list-style-type: none"> - Knowledge translation strategies - Evidence-informed policymaking - Stakeholder engagement in research translation - Dissemination and implementation science 	3

Total Hours: 36