Tribhuvan University

Institute of Medicine

Central Department of Public Health

Teaching Assistant Vacancy (August 2022)

Curriculum for paper 1 and 2 for Population Studies Teaching Assistant

Written Examination

Full marks=60, Pass marks: 50% on both papers

Paper 1. MCQs=30 (30*1) ----- 40 minutes

Paper 2. SAQs= 20 (5*4) and Essay questions=10 (10*1) ----- 1 hour and 20 minutes

Curriculum for written examination (for both paper 1 and 2): From MPH, Demography and Health curriculum of IOM, Contents only from paper VIII (Part B)

Paper VIII (Part B): Demography and Health

Paper VIII		
Course Title	Part B: Demography and Health	
Hours: 60	Full Mark:50	Pass Mark:25

1. Course description

The course is designed to introduce students to basic concepts of measurement and methods of demography to study changes in population size and composition and their effect on public health. It will provide an understanding health and healthcare needs of a population and managing health system through the application of demographic methods and indicators and their interpretations. The course covers theories and basic measures of fertility, mortality and migration; life table construction; stable populations; population projections; age patterns of vital events; population policy; organization of census and demographic surveys so that students will be able to develop various demographic tools for health survey and population-based research to analyze public health issues and develop appropriate solutions.

1. Aim of the course

This is course designed to demonstrate professional competence in the core areas of demographics and health analysis and able to apply principles and methods that are both theoretically informed, and appropriate to the research pursued.

2. Objectives

At the end of course, the student will be able to:

a. Comprehend the concept of demography and health
b. Define and generate information on the population structure, composition and distribution and its application in public health
c. Identify the characteristics and components of population and population growth in relation to public health.
d. Identify the consequences and implication of population growth on public health
e. Describe population theories and principle of population policy
f. Describe the relationship between fertility, mortality and population growth in relation to public health
g. Project the population at national and sub-national level to understand the future health needs
h. Analyze the theories of fertility, mortality and migration
i. Describe the organization of census and survey

3. Course contents

Unit 1: Introduction to demography and health 10hrs

a. Demography and its various terminologies: Demography (formal and social), Population studies, Medical demography, Demography and health, and Public health demography
b. Application of demography in public health programs and research
c. Source of population data and its importance: Population census, Vital registration system, Population register, Sample surveys (Eg. Demographics and health survey), Records from health institution, National and international publications, organization of census and surveys
d. Overview of population structure and characteristics
e. Age, sex structure and sex ratio, Population pyramid, characteristics and its construction and presentation, Concept of young and old population; Median age of population, Aging of population and its Index, Dependency ratio, Population growth rate, Decadal population growth rate, Annual Population Growth Rate (APGR), population dividend
f. Concept on age sex data accuracy methods
g. Single year age distribution of the population, Whipple's Index, Myers' blended index, United Nations age-sex accuracy index

Unit 2: Fertility, reproduction, and fertility theories 10hrs

a. Overview of measures of fertility and reproduction: Crude Birth Rate (CBR.), General Fertility Rate (GFR.), Age Specific Fertility Rate (ASFR.), Total Fertility Rate (TFR.), Standardization of birth rate, Child woman ratio, *children ever born, P*opulation momentum, Replacement level fertility, Baby boom syndrome, Baby bust syndrome, Measures of reproduction (Gross reproduction rate, Net reproduction rate), Determinants of fertility
b. Theories of fertility decline: Classical demographic transition theory, Secularization/ Individualism theory, Wealth flows theory, Micro-economic theory, Supply-demand theory, Bongaarts theory

Unit 3: Mortality, life table and mortality theories 8hrs

a. Overview: Crude Death Rate (CDR), Age Specific Death Rate (ASDR), Cause Specific Death Rate (CSDR), Infant Mortality Rate (IMR), Neonatal Mortality Rate (NMR), Post-neonatal Mortality Rate(PNMR), Maternal Mortality Ratio (MMR), Child Mortality Rate (CMR), Under 5 Mortality Rate (U5MR), Fetal Mortality Rate, Perinatal Mortality Rate, Standardization of death rates, Determinants of mortality
b. Life table: Anatomy and simple construction of life table, importance
c. Theories of mortality decline: Demographic transition theory, Epidemiological transition theory

Unit 4: Migration and migration theories 8hrs

a. Overview of measures of migration: Basic terminology of migration, Measures of migration, Immigration/In-migration rate, Emigration/Out migration rate, Net migration rate, Gross migration rate, Age-specific migration rates, Sex-specific migration rates, Lifetime survival method for net migration, National growth rate method, Vital statistics method, Determinants of migration
b. Migration theories:G. Ravenstein theory, Everett S. Lee theory, Haris-Todaro theory, Political economy theory, World system theory

Unit 5: Nuptiality 6hrs

Overview of measures of nuptiality: Introduction, Basic terminologies of nuptiality, Simple measures of nuptiality: Crude marriage rate (CMR), General marriage rate (GMR), Age-specific marriage rate (ASMR), Total marriage rate (TMR), Average age at first marriage, Singulate mean age at marriage (SMAM)), Determinants of nuptiality

Unit 6: Urbanization and urbanization theories 6hrs

Overview of measures of urbanization: Basic terminology of urbanization, History of urbanization in Nepal, Simple measures of urbanization, Degree of urbanization, Tempo of urbanization, Concentration and dispersion of population, Determinants of urbanization, Urbanization theories: Central place theory (Walter Christaller)

Unit 7: Population estimates and projections 4hrs

Overview: Balancing equation method, Mathematical methods: i. Arithmetic growth model, ii. Geometric growth model, iii. Exponential growth model, iii. Modified exponential growth model, Concept of population doubling time

Unit 8: Population theory and policy 4hrs

a. Population theory: Early thinking on population issues, Malthusian, Neo-malthusians and Cornucopian population theories, Demographic transition theory, Optimum population theory, Epidemiological theory of population
b. Population policy: Concept of population policy, Types of population policy, Review of population policies of Nepal and Current population policy, Population policies around the world

Unit 9: Human Development indicators 4hr

Concept of human development index and Poverty index, Construction technique of HDI and Poverty Index, Critical analysis of the current position of countries in terms of human development and poverty index

4. Teaching learning methods and materials

a. Interactive lectures, practical, group work, Problem Based Learning, project work, case studies, seminar, presentations and use of demographic tools to assess health and disease
b. Problem solving sessions
c. White board, overhead projector, LCD projector, power point slides etc.

5. Evaluation

Internal assessment in different forms	20%
Final examination	80%

The internal assessment will be done either assigning the students giving the topics to write papers, or by class assessment or presentations or others.

The final examination will be done based on the IOM's policy and schedule.

6. References

1. Bhende, AA and Kanitkar T. "Principles of population studies" Himalaya Publishing House, Bombay, (Latest edition)
2. Bogue. D (1969). "Principles of Demography", John Wiley and Son New Works.
3. Bulatao, R.A. (ed.). (2001). *Population and Development Review*, 27. Supplement, Global Fertility Transition.
4. Cox. RC (1986). "Demography", Cambridge University Press.
5. Human Development Report, Nepal (Latest edition)
6. Kirk, D. (1996). *Demographic Transition Theory*. Population Studies, 50 (3): 361-387.
7. Lee, E.S. (1966). *A Theory of Migration*, Demography, 3: 428-445.
8. Ministry of Health and Population. Nepal Population Report (latest publication), population division, MoHP
9. MisraBhaskar "An introduction to the study of population" South Asian Publishers Pvt. New Delhi. (Latest Edition)

10. National Planning Commission, Central Bureau of Statistics. Population Monograph of Nepal (latest publication)
11. Omran, A. R. (1971). The Epidemiologic Transition: A Theory of the Epidemiology of Population Change. *Milbank Memorial Fund Quarterly,* 49 (4): 509-538.
12. Population Reference Bureau. Population Handbook. Latest International Edition
13. Pradhan A., Suvedi B. K, Barnett S et al. (2010). Nepal Maternal Mortality and Morbidity Study 2008/2009, Family Health Division, Government of Nepal, Kathmandu, Nepal.
14. Ravenstein, E. G. (1889). *The Laws of Migration*. Journal of the Royal Statistical Society, 52: 241-305.
15. Sharma, RK (2007). "Demography and Population Problems", Atlantic Publishers and Distributors.
16. Todaro, M. P. (1997). *Internal Migration in Developing Countries: A Review of Theory, Evidence, Methodology and Research Priorities.*Geneva: International Labour Organization.
17. United Nations Development Programme (UNDP). Human Development Report(Latest publication), New York.