M.A./M.Sc. in Population Studies

Rules, Regulations and Syllabus

International Institute for Population Sciences
(DEEMED UNIVERSITY)
Deonar, Mumbai 400 088.
Website: http://www.iipsindia.org

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ABOUT THE INSTITUTE

The International Institute for Population Sciences (IIPS), Mumbai, formerly known as the Demographic Training and Research Centre (DTRC) till 1970, was established in July 1956 under the joint sponsorship of Sir Dorabji Tata Trust, the Government of India and the United Nations. It serves as a regional centre for Training and Research in Population Studies for the ESCAP region. The Institute was re-designated to its present title in 1985 to facilitate the expansion of its academic activities. It was declared as a 'Deemed University' on August 19, 1985 under Section 3 of the UGC Act, 1956 by the Ministry of Human Resource Development, Government of India. The recognition has facilitated the award of recognized degrees by the Institute itself and paved the way for further expansion of the Institute as an academic institution. In 2006, the Institute celebrated its Golden Jubilee.

IIPS holds a unique position among all the regional population centres. It was the first such centre to be started in India, and it serves a much larger population than any of the other regional centres. The Institute is under the administrative control of the Ministry of Health and Family Welfare, Government of India. There are seven Academic Departments in the Institute. The faculty members and the supporting staff belong to diverse interdisciplinary background with specialisation in some core areas of population sciences, trained in India or abroad.

The Institute is the hub of population and health related teaching and research in India, playing a vital role for planning and development of the country. During the past years, students from different countries of Asia and the Pacific region, Africa and North America have been trained at the Institute. The alumni are occupying prestigious positions at national and international organisations, universities and colleges and non-governmental reputed organisations. Besides teaching and research activities, the Institute also provides consultancy to the Government and Non-Governmental organizations and other academic institutions.

During the last six decades the Institute has organized many seminar and conferences of National and International level in the field of population studies which are of worldwide importance. Institute had conducted many important surveys like National Family Health Survey (NFHS), District Level Household Survey (DLHS), Assessment of National Rural Health Mission (NRHM), YOUTH in India Project, Global Adult Tobacco Survey (GATS India Project), Research Intervention on Sexual Health Theory to Action (RISHTA Project), Nutrition Surveys and Longitudinal Aging Study in India (LASI).

TEACHING PROGRAMS

The Institute offers the following academic programs:

Full Time Course and duration of courses

1. Master of Arts/ Master of Science in Population Studies (M.A./M.Sc.) – two years
2. Master of Science (M.Sc.) in Biostatistics and Demography – two years
3. Master of Population Studies (MPS) – one year
4. Master of Philosophy (M.Phil.) in Population Studies / Biostatistics & Demography – one year
5. Integrated M.Phil. and Ph.D. in Population Studies / Biostatistics & Demography – four to seven years
6. Doctor of Philosophy (Ph.D.) in Population Studies – four to six years
7. Post-Doctoral Fellowship (P.D.F.) – one year
8. Diploma in Health Promotion Education (D.H.P.E) *[Offered by the Family Welfare Training and Research Centre (FWTRC), Mumbai in affiliation with IIPS]*

Distance Education Courses

9. Master of Arts in Population Studies (MA) – two to four years

Short Term Training Courses

Institute also conducts short term training courses and workshops on population and related issues and charges nominal fee.

Rules for Master of Arts/Science in Population Studies (M.A./M.Sc.)

The M.A./M.Sc. Program is designed to provide a higher level of understanding of population sciences including an in-depth knowledge of the linkages between population and various dimensions of socio-economic development and health

Eligibility Criteria for Admission:

Candidates with a Bachelor's degree from any recognized universities in India or abroad with a minimum of 55% marks (50% for reverved candidates) will be eligible for admission to the above programme. From the academic year 2020, candidates holding a bachelors degree in any subject other than B.Com and Management sciences can apply for this course. Candidates awaiting results of qualifying examination latest by 30th September of the admission year can also apply for consideration. The upper age limit is 25 years as on 30th June of admission year. Marks and age are relaxable for candidates belonging to reserved categories as per GOI rules. The eligibility criteria is revised time to time. Applicants need to check the admission notice in detail before applying for this course.

Selection Criteria for the M.A./M.Sc. Program : The selection is made on the basis of written test.

Number of Seats and Award of Degrees :

There are 50 Government of India Awards (Fellowships of Rs. 5000/- per month) available for M.A./M.Sc. course. There are no other allowances. Number of seats to be filled depends on the internal committee decision.

Duration of the Course :

The M.A./M.Sc. program, which is of two academic years comprises four semesters, begins from the July. The first semester ends by November. The second semester ends by May; the third semester begins in July and the fourth semester begins by November.

Conditions for the Award:

M.A./M.Sc. Program is a full time course.

a) The student must not accept or hold any appointment paid or otherwise or receive any emoluments, salary, stipend, etc., from any other source during the tenure of the award.

b) The student should also obtain prior permission of the Director in writing for appearing at any examination conducted by any other University/Institution.

c) The fellowship will be available from the onset of the course till the end of the course.

d) The fellowship may be terminated at any time if the Institute is not satisfied with the progress or conduct of the fellow. e) The student will have to execute a bond requiring him/her to refund the fellowship received by him/her, if the fellow discontinues before the end of the prescribed period. The condition of the bond cannot be waived or relaxed except by the Director with the consent of the Executive Council of the Institute. f) If a student's performance in the first semester is not found satisfactory, or his/her conduct is found unsatisfactory on the basis of indiscipline of any act as is likely to undermine the prestige of the Institute, or endanger harmony of academic life of the Institute or is likely to violate the rules of the institute, his/her admission and fellowship will be terminated without any further notice. In case the fellowship is terminated, he/she will be required to refund the whole of the fellowship money drawn till that date provided the action against him/her has not been contemplated on the ground of unsatisfactory performance as stated above. g) After fulfilling all the criteria as per the rules & regulation of M.A./ M.Sc. Program, the candidates having degree in Bachelor of Arts and Bachelor of Mass Communication, will be awarded Master of Arts (M.A.) in Population Studies and the candidates having degree in Bachelor of Science will be awarded Master of Science (M.Sc.) degree in Population Studies from Institute in the formal convocation function. h) Fees: The candidates admitted to the programme will have to pay the fees as per schedule of the Institute on 1st January and 1st July every year regularly. For payment of fees, a grace period of 30 days shall be given without late fee. Thereafter, 5% on all dues will be charged extra as late fee, every month.

Hostel Accommodation:
Accommodation in the hostel of the Institute will be provided to the students at the applicable rate, subject to availability.

Medical Facilities:
The students of the Institute will have access to free medical advice from the medical officers of the Institute.

Leave:
A student can take leave for a maximum of four working days in a semester on the recommendation of Course Co-ordinator and granted by the Director. Kindly check updates from IIPS web page.

Attendance
Please look into the updated attendance rule in the Institute Webpage.

Evaluation
Grades obtained in all the subjects counted for determining the overall grade for M.A./M.Sc. programme. Minimum Grade required for passing is "P" (Pass) in each unit.

Grading System The following ten points grading system is followed in the Institute:

1. The teacher concerned will set the question paper and also evaluate the answer books as per grading pattern.
2. A final grade for each paper will be arrived by taking weighted average of grades given in different sections of the paper in case of questions of unequal weights. The weights can be given in proportion to the credit (i.e. number of hours) assigned for each section of the paper.
3. Overall Grade will be arrived on the basis of the number of credit hours and grade points for each subject

For Updated grading system, please see IIPS website.

Written Examination

Written examination will be conducted for all Courses

Re-evaluation of Answer Sheets

i) A student can have access to his/her examination papers in the form of photo copies at a cost of Rs. 200/- per paper with prior approval of the Director.

ii) A candidate shall apply for revaluation of his/her answer sheet on the prescribed form to the Director of the Institute within three weeks from the date of declaration of the result along with the non-refundable fee of Rs. 500/- only per paper.

iii) No application for revaluation will be entertained unless a photocopy of the statement of marks in the examination concerned is enclosed to the application.

iv) The result of the revaluation of a candidate's answer-book(s) shall be binding on him/her and that he/she shall accept the revised marks as final.

v) If a candidate, whose answer-book(s) have been reassessed, becomes eligible for any prize or any other award, the same shall be granted to him/her and the award previously made shall be cancelled. If as a result of revaluation, a candidate becomes eligible for the provision of a condonation of deficiency, the same shall be given to him/her.

Re-examination

(1) Re-examination will not be conducted during the courseperiod.

(2) Those students who fail or could not appear in any examination will be allowed to re-appear in a paper in the next semesterexaminations.

(3) Those failing in any exam of final semester will not be awarded the degree in the same academic year. They can appear in the re-examination along with first semester of the next batch.

(4) Maximum of three attempts will be allowed including the first appearance in each paper.

(5) There will not be any down grading inre-examinations.

(6) 50 Percent of clearance of the total papers in each semester is compulsory to continue the study in next semester.

Dissertation:

Students in IV semester need to prepare a dissertation on approved topic. It could be based on parmary and/or secondary data. No funding is provided for primary data collection.

Students need to present and defend his/her work which is being evaluated by committee members.During presentation sessions, participation of all MA/MSc second year students is compulsory, failing which Instiitute can take action. Last date for submitting soft copy of the dissertation synopsis to a) the Academic section, b) to MA/MSc 2nd Year students and c) to all faculty members is fixed.

Hard copy of the synopsis should be given to the Evaluation Committee Members and Guide one day before presentation. Length of the synopsis (including tables, figures and references etc.) should not be more than 22 pages. Each presenter will have 20 minutes for presentation. The grade for dissertation is a combined score based on presentation, defense, content.Each internal evaluator must submit a separate grade sheet in sealed envelope to the Controller of Examinations. Students need to submit a bound volume of the dissertation by a date specified by examination centre. In viva- voce, students should carry a copy of the dissertation.

Expected Outcomes of MA/ M.Sc. in Population Studies:

On completion of two years Masters course, students shall be able to:

- analyse, interpret and criticise demographic, health and public health research
- demonstrate an understanding of the essential principles of modern demographic methods and statistical softwares and how to apply them
- employ basic computational skills used in the analysis of population, health and development
- undertake original research projects that makes a contribution to the body of knowledge for human wellbeing
- gain understanding in presentation skills and developing research papers
- develop knowledge in research proposal development, sampling, modalities of conducting research
- exhibit the ability to disseminate research findings to the scientific community and the general public
- develop confidence in works related to public welfare
- undertake jobs related to health and development

Course No.	Course Name	Course Type	Credits
	SEMESTER-I		
MSP-F1	Sociology, Psychology and Anthropology*	F	NC
MSP-C1	Basic Statistical Methods for Population Studies	C	4
MSP-C2	Introduction to Demography and History of Population	C	4
MSP-C3	Fertility and Nuptiality	C	4
MSP-C4	Mortality, Morbidity and Public Health	C	4
MSP-E1.1	Healthcare System and Policies	E	3
MSP-E1.2	Biostatistics and Epidemiology	E	3
	Semester Credits		**19**
	SEMESTER-II		
MSP-F2	Economics and Geography*	F	NC
MSP-C5	Evaluation, Adjustment of Demographic Data and		
	Population Projection	C	4
MSP-C6	Introduction to Demographic and Statistical Software	C	4
MSP-C7	Migration and Urbanization	C	4
MSP-V1	Viva-Voce-I	V1	2
MSP-E2.1	Historical Demography	E	3
MSP-E2.2	Spatial Demography	E	3
MSP-E3.1	Health Economics and Financing	E	3
MSP-E3.2	Urbanisation, Space and Planning	E	3
	Semester Credits		**20**
	SEMESTER-III		
MSP-C8	Gender and Reproductive Health	C	4
MSP-C9	Population and Development	C	4
MSP-C10	Research Methodology	C	4
MSP-E4.1	Concepts and Measures of Global Health	E	3
MSP-E4.2	Gender, Health and Development	E	3
MSP-E5.1	Advanced Statistical Packages and Application in		
	Large Scale data	E	3
MSP-E5.2	Population, Environment and Sustainable Development	E	3
	Semester Credits		**18**

SEMESTER-IV			
MSP-C11	Population Policies, Programme and Evaluation		
	of HFW Programme	C	4
MSP- C12	Population Ageing and Health Transition	C	4
MSP-D	Dissertation	C	10[$]
MSP-V2	Viva-Voce-II	V2	2
MSP-E6.1	Operation Research in Reproductive Health	E	3
MSP-E6.2	Monitoring and Evaluation in Population & Health	E	3
	Semester Credits		**23**
	TOTAL CREDITS		**80**

*Not counted for calculating the final grade

- F – Foundation course, C – Core course, E – Elective course, NC: Non Credited course; V-Viva voce, D–dissertation.
- Semester I: One elective should be opted; i.e. E1.1/E1.2
- Semester II: Two electives should be opted from each group, i.e. E2.1/E2.2 & E3.1/E3.2
- Semester III: Two electives should be opted from each group; i.e. E4.1/E4.2 & E5.1/E5.2
- Semester IV: One elective should be opted; i.e. E6.1/E6.2
- Core courses: 68%; Elective courses: 32%
- Core papers cannot be changed. Elective paper can be changed if the student fails in an elective paper and submits his/her request for a change in writing.
- $ Weightage in evaluation procedure for dissertation – Guide: 0.25, Presentation & Defense: 0.25, Content: 0.50.
- For all papers, the written and assignment weightage is 0.8 and 0.2 respectively while for Research Methodology (MSP C-10) it is 0.6 and 0.4 respectively.

SEMESTER – I

MSP-F1 **45 Hours**

SOCIOLOGY, PSYCHOLOGY AND ANTHROPOLOGY

The Study of Human Society:

a) The Sociological/Anthropological point of views, b) The Value of Sociology and Anthropology andc) Perspectives in Sociology and Anthropology

Major Groups:

a) Primary and Secondary Groups, b)Rural and Urban Communities, c) Caste
d) Class and Stratification

The Social Structure:

Major forms of Social Structure: a) Types of social group, b) Groups in social life c) The Primary group, d) The Great Association

The Family: a) Sociological Significance of the Family, b) Early forms of the Family, c) Types and functions of Family

The Community:

a) The Communities as place. Its Physical Configuration
b) Community and Intra Communal Difference

Social Class and Caste: Principles of Class and Caste

Ethnic and Racial Groups:

a) Ethnic and Racial Relations in Social life, b) Ethnic and Racial groups as 'Caste'

Varna and Caste System

i) Concept & Definition of Varna and Caste System, Scheduled Caste
ii) Changing Caste System in India-legislation, normative, and behavioral context and its influence on demographic characteristic of the Population

Tribes in India:

a) Definition of Tribe/ Scheduled Tribe; b) Special distribution; c) Composition; d) Size and Growth

Society and Culture in India

1. Aspects of society and culture in India, and its role and importance in Population Studies.
2. Social Institutions and their role in influencing demographic situation of the Population of India - Family, Marriage, Kinship and Religion

Social Institutions:

Family, Kinship, Marriage, Religion, Statues of women and Relevance with demographic components

Economics Institutions: Land tenure, Land use pattern, and Tribal Economy.

Administrative and Political: Traditional Panchayat and Panchayat Rai Institutions, Tribal Movements and Developments.

Social Change

Definition and Concept of Social Change
Process of Social Cultural Change in India and its role in influencing demographic characteristic:

a) Sanskritization, b) Secularization, c) Liberalization, d) Modernization,
e) Democratization

Social Psychological Concepts:

The Value of psychology and perspectives in psychology; scientific study of social influences on behavior and the interaction between individuals and groups; social pressure, leadership

Basics of Psychology:

Why Psychology, branches of psychology, methods of research, Psychological well-being across major stages of the life span. Role of psychology in population studies.

Sensation, Attention and Perception:

Sensation: concepts of threshold, Factors influencing attention including set and characteristics of stimulus; Definition and concept of perception, biological factors in perception; Perceptual organization-influence of past experiences, perceptual defence-factors influencing space and depth perception, size estimation and perceptual readiness; Extrasensory perception; Culture and perception, Subliminal perception.

Motivation and Emotion:
Psychological and physiological basis of motivation and emotion; Effects of motivation and emotion on behaviour; Extrinsic and intrinsic motivation; Factors influencing intrinsic motivation; the related issues.

Personality:
Definition and concept of personality; Theories of personality (psychoanalytical, socio-cultural, interpersonal, developmental, humanistic, behaviouristic, trait and type approaches); big 5 factor theory;

Language and Communication:
Human language - Properties, structure and linguistic hierarchy, Language acquisition-predisposition, critical period hypothesis; Process and types of communication - effective communication training.

Psychological well being and Mental Disorders:
Concept of health-ill health; Positive health, well being; Causal factors in mental disorders (Anxiety disorders, mood disorders, schizophrenia and delusional disorders; personality disorders, substance abuse disorders); Factors influencing positive health, well being, life style and quality of life; Happiness disposition.

Reading List

Essential Readings :

1. Davis Kingslay, *Human Society,* Macmillen and Co., New York, (1975), Chapters 1, 3,5,6.
2. Kapadia K. M., *Marriage and Family in India,* Oxford University Press, Calcutta, (1986).
3. Ketkar S.V., *History of Caste in India,* Rawt Publication, Jaipur, (1979).
4. Kuppuswamy B., Revised by B.V. Kumar, *Social Change in India,* Konark Publication Pvt. Ltd. Delhi, (1990).
5. Mandelbaum D.G., *Society in India-Continuity and Change and Change and Continuity,* Vol.I. University of California Press, London, (1970).
6. MaCiver R.M., Charles H. Page, *Society an Introductory Analysis,* Halt Riehart Winston, New York, (1949), Chapters No.1, 3,7,11,15,22,24,25,26.
7. Srinivas M.N.,*Social Change in Modern India,* University of California Press, Berkeley, (1966)

8. Vidyarthi L.P., *The Tribal Culture of India,* Concept Publishing Co., Delhi, (1977).
9. Sigmund Freud, The Interpretation of Dreams (1900)
10. Charles M. Duhigg, *The Power of Habit* (2012)
11. Karen Horney, The Neurotic Personality of Our Time (1937)
12. Oliver Burkeman, The Antidote: Happiness for People Who Can't Stand Positive Thinking (2012) .
13. Carl Gustav Jung, Man and His Symbols (1964)
14. Introduction to Psychology 10th Edition James W. Kalat (2013)

Suggested Readings :

1. Hasain N., *Tribal India Today,* Harnam Publication, New Delhi, (1986).
2. Krech D.; Crutchfield R.S. and Ballachey E.L., *Individual in Society,* International Student Edition, McGraw-Hill Book Company, INC, New York, (1962).
3. Linda A. Mooney, Davis Knox & Caroline Schacht, *Understanding Social Problems,* 3rd Edition, Wadsworth / Thomson Learning, USA, (2002).
4. N.P. Chaubey, *Indian Society at the Turn of the Century,* Century Printers,New Delhi, (1988).
5. Ram Mohan, *Encyclopedia of Social Problems in Developing Countries,*Vol-1, 2,3, Sarup & Sons, New Delhi, (2003).
   a. Richard T. Lapiere, *Social Change,* McGraw-Hill Book Company, New York, (1965).
6. S. Kumar and S. Gajrani, *Culture and Society in India,* Om Publications, Faridabad, (1999).
7. S.R.Maheswary, *Society and Culture,* Rajat Publications, Delhi, (2000).
8. RamKrishna Mukherjee, *Society, Culture & Development, Sage Publications,* New Delhi, (1991).
9. Feldman R.S., *Social Psychology Theories, Research and Applications,* International Student Edition, McGraw-Hill Book Company, INC, New York, (1985).
10. France N. Magill (ed.),*International Encyclopedia of Sociology,* Vol. II and I (selected readings) Fitzriy Dearborn Publishers, England, (1995).

MSP C1 **60 Hours**

BASIC STATISTICAL METHODS FOR POPULATION STUDIES

Learning Objective: This course aims to provide students with basic knowledge of statistical techniques which can be used in demographic analysis.

Introduction to statistics: Descriptive and Inductive statistics. Concept of variables, Nominal, Ordinal and Interval and ratio scale variables.

Tabulation of data, conversion of raw data into frequency distribution, graphical presentation of nominal, ordinal data, Logarithms: properties of logarithms, Ratios, Proportion and rates, growth rates (arithmetic, geometric and exponential), Interpolation and Extrapolation.

Measures of Central Tendency: Mean (arithmetic, geometric, harmonic) Median, Mode; Merits and demerits of different measures.

Measures of dispersion: Range, Variance, Standard Deviation; Merits and demerits of different measures of dispersion. Measures of Skewness and Kurtosis.

Techniques of analyzing bivariate nominal and ordinal level data: Contingency table, odds ratios, relative risk.

Introduction to set theory, permutations and combinations: Introduction to the concept of probability, A-priory, and mathematical probability. Events: exhaustive, mutually exclusive events; Laws of probability, additive and multiplicative laws of probability through demographic data, Bayes' theorem

Discrete probability distributions: Binomial and exponential functions, Binomial probability distribution and Poisson distribution and their properties. Continuous probability distribution; Introduction to Normal distribution and its properties, applications of normal distribution.

Introduction to the concept of correlation: Pearson correlation coefficient, and its properties; Spearman ranks correlation coefficient. Concept of linear regression, fitting of regression line to bi-variate data.

Concepts in Inductive statistics: Population, sample parameter, and statistic. Sampling distribution of mean and standard error. Concepts of statistical hypothesis, critical region, level of significance, confidence interval and two types of errors.

Testing statistical hypothesis and test of significance : Introducing the t distribution, comparing two groups, principles of comparison, independent t-test and paired t-test, Assumptions involved in t testing. Testing the association of attributes and Chi-square goodness of fit.

Analysis of Variance: Introduction to Multivariate Analysis. Concept of multi-variate regression. Concept of Multiple and Partial correlation coefficients in regression analysis. Standardized regression coefficients, Regression with dummy variables.

Reading List

Essential Readings :

1. Blalock, Hubert M. (1960): *Social Statistics*, McGraw-Hill Book Company, New York.
2. Chakravorti, S.R. and Giri, N. (1997): *Basic Statistics*, South Asian Publishers, New Delhi.
3. Clarke, G.M. and Cooke, D.,(1994): *A Basic Course in Statistics*, Arnold, London.
4. Dixon, W.J and Massey, F.J. (1983) Introduction to Statistical Analysis, 4th ed., New York, MC Graw Hill, 380-381, 534.
5. Goon, A.M., Gupta, M.K. and Dasgupta, B. (1985): *Fundamentals of Statistics* Vol. I , The World Press Private Ltd. Calcutta.
6. Jain, S.K.1979. *Basic Mathematics for demographers*. Canberra: The Australian National University.
7. Lipshutz, Seymour., Schaum's Outline Theory and Problems of *Set Theory and Related Topics* Series, Mcgraw Hill.
8. Marcello Pagano and Kimberlee Gourneau (2000) "Principles of Biostatistics" Second Edition, Duxbury Thomson Learning, United States.
9. Prakasam, C.P., G. Rama Rao, and R.B. Upadhyay (1987): *Basic Mathematics in Population Studies*, Gemini Publishers, Mumbai.
10. Siegel J.J. and D.A. Swanson (Ed.), 2004. *The Methods and Materials of Demography*. Second Edition. Elaevier Academic Press.
11. Venkatachary, K (1994). *Elements of Mathematics for Demographers*.

Monograph Series No.9. Regional Institute for Population Studies, University of Ghana. Legon.

Suggested Readings :

1. Bhat N.R and M.R. Singh, 1993. *Applied Mathematics*. New Delhi: Tata McGraw – Hill Publishing Company Ltd.
2. Dillon, W.R. and Goldstein, M. (1984): *Multivariate Analysis*, John Willey and Sons, New York.
3. Douglas and Altman (2006): Practical Statistics for Medical Research, Chapman and Hall Publication, Washington, D.C.
4. Ebdon, E. (1978): Statistics in Geography, Basil Blackwel, Oxford.
5. Fisher, L.D and Van Belle, G. (1993) Biostatistics : A Methodology of the Health Sciences, New York, Wiley Intgescience,
6. Goon, A.M., Gupta, M.K. and Dasgupta, B. (1985): *Fundamental of Statistics* Vol. I , The World Press Private Ltd. Calcutta.
7. Graeme Hutcheson and Nick Sofroniou, (1999): *The Multivariate for Social Scientist,* SAGE Publications.
8. Gupta, S.C. and Kapoor, V.K. (1986): *Fundamental of Mathematical Statistics*, Sultan Chand and Sons Publishers, Delhi.
9. Howell David C. *"Fundamental Statistics for the Behavioral Sciences",* 4th Edition, an International Thosuross Publishing Company, USA.
10. Mc Clave, James T., P. George Benson and Terry Sincich (2001): *Statistics for Business and Economic,* Eighth Edition, Prentice Hall, NJ, USA.
11. Norman R. Kurtz (1999): *Statistical Analysis for the Social Sciences,* Allyn and Bacon.
12. Retherford, R.D. and Choe, M. K., (1993): *Statistical Models for Casual Analysis*, A Wiley-Inter-Science Publications, John Wiley and Sons, INC, New York.
13. Sundaram, K. R., S. N. Dwivedi and V Sreenivas. (2009). Medical Statistics Principles & Methods. Anshan Publisher.

MSP-C2 **60 Hours**

INTRODUCTION TO DEMOGRAPHY AND HISTORY OF POPULATION

Learning Objectives: This is the first paper in Population Studies course for MA/ M Sc. students. The basic objective of this paper is to introduce the students to the scope and importance of the discipline of population studies. At the end of 60 hours, including lectures and assignments, the students are expected to get clear idea of the evolution and the scope of the discipline, past, present and future scenario of population growth and age and sex structures of the world, major regions, and India. They will be familiar with various sources of demographic data with a focus on India, as well as the strengths and weaknesses of data sets.

Introduction to Demography.

a. Definition and Scope: Evolution of demography as a scientific discipline; Nature and scope of demography and changes in it over time. Multi-disciplinary nature of Demography, its linkage with other social science disciplines including statistics and mathematics. Basic demographic concepts. Components of population change, and demographic equation
b. Demographic transition theory

Population History

a. Global population trends: Historical population trends, World Population Growth- a brief history, The Power of Doubling
b. Global variation in population size and growth
c. Past, present and future population trends across the world, continents, and major regions
d. History of population in India: Trends and growth of India's population
e. Concerns of population growth- before and after independence.
f. Demographic profiles of India and states

Concepts and Measures of age and sex structure

a. Defining age and sex, sex ratio, sex ratio at birth
b. Classification of age group and their importance

c. Measures of age structure: Percent distribution, Median age, age-sex pyramid, dependency ratio and potential support ratio
d. Factors affecting age and sex structure
e. Importance of age-sex structure in Demography.
f. Socio-economic implications of age and sex structure
g. Demographic dividend.

Sources of Demographic Data.

a. Data requirements, types of demographic data.
b. Different sources of data.
c. Population census across the world. Census taking under British India, Indian census, details of different items on which Indian census collect data, publication of census data/ reports.
d. Vital registration system
e. Sample registration system (SRS), survey on causes of death.
f. National Sample Survey Organization's surveys, details of different rounds collecting population and health data.
g. Nationwide sample surveys National Family Health Survey (NFHS), District Level Household and Facility Survey (DLHS), etc.
h. Availability of data at various levels of disaggregation
i. Strengths and weaknesses of various data sets

Dynamics ofAge-Sex Structure of the World and India .

a. Present levels, past trends and probable future changes in age-sex structure of the world and major regions.
b. Present levels, past trends and probable future changes in age-sex structure of India and states.
c. Determinants and consequences of age-sex structure of population. Ageing of the population. Relative role of low fertility and low mortality in ageing. Socio-economic consequences of population ageing.

Reading List

Essential Readings :

1. Henry S. Shryock, Jacob S. Siegel, Elizabeth A. Larmon (1973) *The Methods and Materials of Demography*, Chapters 1, 2, 3, 7, 9,10, Elsevier Science, USA.

2. John Weeks (2005): *Population: An Introduction to Concepts and Issues*, Wordsworth Learning. Singapore 9th edition.
3. United Nations, (1973): *The Determinants and Consequences of Population Trends*, Vol. I, *Population Studies*, No. 50, Chapter VII, New York.
4. Bhende, A. and T. Kanitkar, (2006): *Principles of Population Studies* Himalaya Publishing House, Bombay.
5. United Nations, *World Population Ageing*, 1950-2050
6. Davis, Kingsley (1968) . *The Population of India and Pakist*an, Russell and Russell, New York
7. United Nations (1958*). Multilingual Demographic Dictionary*, John Wiley & Sons Ltd., New York
8. Registrar General of India, *Census of India -2011,* Ministry of Home Affairs, Govt. of India.
9. Maheshwari, S.R. (1996). *The Census Administration under the Raj and After*, Concept Publishing Company Pvt. Ltd., New Delhi.

MSP-C3 **60 Hours**

FERTILITY AND NUPTIALITY

Learning Objectives: After completion of this course the student will be able to:

1 Distinguish among different terms used for fertility study
2 Describe physiology of human reproduction and methods of family planning
3 Identify different sources of data to calculate different indicators of fertility
4 Understand levels, trends and differentials in fertility
5 Describe and analyze the framework for fertility analysis
6 Calculate and interpret different indicators of fertility

I. FERTILITY CONCEPTS, THEORIES, LEVELS AND TRENDS

Terms and Concepts

Importance of the study fertility in population dynamics; Basic terms and concepts used in the study of fertility; Physiology of human reproduction and methods of family planning.

Sources of Data for Fertility Study

Census, Sample Registration System, National Family Health Survey, District Level Household Survey – Reproductive and Child Health

Fertility Transition in Developed Countries

Levels, Trends and Differentials in fertility of Developed Countries and underlying factors; Below-replacement level fertility in developed countries and its implications.

Fertility Transition in Developing Countries

Levels, Trends and Differentials in fertility of Developing Countries; Causes of high fertility in developing countries; Fertility Transition in India: Historical trend and regional patterns in development, culture and fertility transition; Fertility Surveys (WFS, DHS, NFHS) - substantive findings, Emerging research issues.

Framework for Fertility Analysis

Determinants of natural fertility; Davis intermediate variables framework of fertility; Bongaarts proximate determinants of fertility; Socio-economic determinants of proximate variables;

Hypothesis and Theories of Fertility

Theory of Social Capillarity, Theory of Change Response, Theory of Diffusion and Cultural Lag, Liebenstein Theory, Becker's Theory, Easterlin Framework of Fertility, Caldwell's Theory, U. N. Threshold Hypothesis and Reproductive motivations and value of children theories.

Reading List for Fertility (Section A)

1. David G. Mandelbaum, (1974), *Human Fertility in India: Social Components and Policy Perspectives,* University of California Press, Berkeley.
2. Gray, R et al (eds.), (1993), *Biomedical and demographic determinants of reproduction*, Oxford University Press, Oxford.
3. Van De Ka, (1996), *"Anchored Narratives: Fifty Years of Research into the Determinants of Fertility" Population Studies,* 50,1.
4. Sydney H. Coontz, (1968), *Population Theories and the Economic Interpretation*, Routelage, London.
5. United Nations, (1999), *Below Replacement Fertility*, Population Bulletin of the UN, Special Issue Nos. 40/41, Department of Economic and Social Affairs, UN, New York.
6. United Nations, (1973), *Determinants and Consequences of Population Trends, Vol. 1*, pages 96-104, UN, New York.

II. MEASURING AND MODELING FERTILITY PROCESS

Learning Objectives

After completing the lesson on *Measuring and modeling fertility*, you should be able to:

- define, calculate and point out: the data sources, data requirements, salient features, advantages and disadvantages of various direct and indirect measures of fertility and reproduction
- define what is meant by 'proximate determinants of fertility' and describe the Bongaarts model for proximate determinants of fertility
- define what is meant by 'age pattern of fertility' and describe the Coale-Trussell model for estimating the fertility control measure the small 'm'.
- define what is meant by 'reverse survival of the population' and describe the indirect procedure for estimating CBR/GFR using the reverse survival method
- define what is meant by 'Child-woman ratio (CWR)' and describe the indirect

procedure for estimating CBR/TFR using the CWRs and the Rele method.

- define what is meant by 'mean number of children-ever born (MNCEB) and describe the indirect procedure for estimating CBR/TFR using the Brass method and its variants

Important Key Terms

Age-order specific fertility rate, Age-specific fertility rate, Age-specific marital fertility rate, Age-specific non-marital fertility rate, Child-woman ratio, Cohort, Cohort approach, Completed fertility, Crude birth rate, Direct standardized crude birth rate, Indirect standardized crude birth rate, Fertility, General order fertility rate, General fertility rate, General marital fertility rate, General non-marital fertility rate, General order-specific fertility rate, Gross reproduction rate, Mean age of the Fertility Schedule, Natural fertility, Net reproduction rate, Period approach, Real cohort, Replacement-level fertility, Reproduction, Standardization, Synthetic cohort, Total-order fertility rate, Total fertility rate, Total marital fertility rate, Total non-marital fertility rate.

Detailed Course outline:

Concepts/Definitions: (Live Birth, Fertility/Natality, Infertility, Fecundity, Infecundity (Sterility), Primary Sterility, Secondary Sterility, Fecundability, Reproduction)
Sources of data for fertility studies
Quality of Data (in specific to birth statistics)/Errors in fertility rates
Problems in analysis of fertility statistics
Period measures versus cohort measures
Direct Estimation of Fertility and Indirect Estimation of Fertility
Period measures of fertility (Definition, Formula, Data Required, Example, Points to note, Advantages, Limitations)
Fertility Measures
Basic Measures of Fertility: Crude birth rate (CBR); General fertility rate (GFR); Age-specific fertility rate (ASFR); Total fertility rate (TFR)
Child-Woman Ratio (CWR), Sex Ratio at Birth (SRB)
Timing of Fertility: Cumulative Age-specific Fertility Rate (CASFR) (Children already born); Percent age distribution of lifetime fertility (ADF); Mean Age of the Fertility Schedule (MAFS or 'm bar');

Order-specific fertility measures: Proportion of births of order i or above; General Order-Specific Fertility rate (GFR_i) or (GOSFR), Age-Order Specific Fertility Rate ($AOSFR_i$), Total Order Specific Fertility Rate (TFR_i) or (TOSFR), Marital and Nonmarital specific fertility measures, General marital fertility rate (GMFR), Age-specific marital fertility rate (ASMFR), Total marital fertility rate (TMFR), General nonmarital fertility rate (GIFR), Age-specific nonmarital fertility rate (ASIFR), Total nonmarital fertility rate (TIFR), Non-marital birth ratio (or illegitimacy ratio),

Standardized Birth Rates: Direct Standardized (Crude) birth rate, Indirect Standardized (Crude) birth rate, Sex Age Adjusted Birth Rate (SAABR), Coale's Fertility Indexes

Reproduction Measures: Gross reproduction rate (GRR), Net reproduction rate(NRR) Cohort measures of fertility: Cohort total fertility rate (CTFR), Mean number of children ever born (MNCEB), Parity Progression Ratios (PPR), Birth Interval Analysis (BIA)

Fertility Models

Bongaarts model for proximate determinants of fertility and its applications Coale-Trussell's model for age patterns of fertility

Indirect Estimation of Fertility: (Description, Data Required, Assumptions, Procedure, Advantages, Limitations, Software)

Techniques based on enumerated population
- Rejuvenation (/Reverse Survival) technique (Spreadsheet: REVCBR)
- Rele technique (Spreadsheet: RELEFERT)

Techniques based on special fertility questions
- P/F ratio technique(Spreadsheet: PFRATIO)
- Brass P1/F1 ratio technique (Spreadsheet: PFRATIO)

Reading List

Essential Readings :

1. Siegel, J and D.A. Swanson (2004). *The Methods and Materials of Demography (Second Edition)*. Elsevier Academic Press, USA. Chapter15,Pp.371-405; Chapter 16, Pp.407-428;Chapter 17, Pp.429-453.
2. Bhende, Asha A. and Tara Kanitkar (2004) *Principles of Population Studies*, Mumbai: Himalaya Publishing House, Chapter8, Pp.241-288.

3. Pathak, K.B. and F.Ram (1998) *Techniques of Demographic Analysis*, Mumbai: Himalaya Publishing House, Chapter 4 Pp.108-153 and Chapter8, Pp.339-372.
4. Mishra, B.D.(1981) *An Introduction to the Study of Population*, New Delhi: South Asian Publishers, Pvt. Ltd., Chapter 7, Pp.
5. Srinivasan K. (1998) *Basic Demographic Techniques and Applications*. New Delhi: Sage Publications. Chapter IV,Pp.59-85

Suggested Readings :

1. Campbell, Aruthur A. (1983) *Manual of Fertility Analysis*. London: Churchill Livingstone, for the World Health Organization
2. Newell, Colin (1988). *Methods and Models in Demography.* London: Frances Pinter
3. Palmore, James A. and Gardner, Robert W. (1983). *Measuring Mortality, Fertility and Natural Increase: a Self-Teaching Guide to Elementary Measures*. Honolulu: East-West Population Institute., East-West Center, Chapter 3,Pp.59-19.
4. Pollard, A.H., Yusuf, Farhat, and Pollard, G.N. (1990). *Demographic Techniques* (third edition). Sydney: Pergamon Press, Chapter 6,Pp.81-103.
5. Rowland, Donald,T. (2006) *Demographic methods and concepts*. New Yark: Oxford University Press, Chapter 7, Pp.220-261.

III. NUPTIALITY

Introduction, Basic Concepts, Sources of Data and their limitations.

Measures of Nuptiality from Registration data.
Analysis of Marital Status Data from Census.

a. Singulate Mean Age at Marriage (SMAM) - Synthetic Cohort and Decadal Synthetic Cohort Method.
b. Indices of Nuptiality (Coale's Indices)
   Marriage Pattern in India and Selected Countries and related factors.
   Marriage squeeze: Concepts and Implications
   Gross and Net Nuptiality Tables.
   Multistate approach in Nuptiality analysis.
   Standard Age Pattern of Marriage – Coale's Model.
   Divorce and Widowhood.
c. Definition and basic measures.
d. Marriage Dissolution Tables.

e. Mean Age at Widowhood/Divorce from Census Returns.
f. Levels and Trends in Widowhood in India and Selected Countries.
g. Impact of Changes in Widowhood/Divorce on Fertility.

Definition and Measures of Remarriages of Widowed and Divorces.

Reading List

Essential Readings :

1. Agarwala S. N. (1962). *Age at Marriage in India*. Kitab Mahal, Allahabad.
2. Coale, A. J. (1971). Age Patterns of Marriage, *Population Studies*, Vol. 25(2), PP 193-214.
3. Hajnal, John. (1953). Age at Marriage and Proportions Marrying. *Population Studies*, Vol. 7 (2), PP 111-136.
4. Henry S. Shryock et. al. *The Methods and Materials of Demography*,Vol. 1 and 2, 1971, U.S. Department of Commerce, Bureau of Census, PP. 283-298 and 549-578.
5. Siegel Jacob S., David A.Swansn (Eds.). (2004). *The Methods and Materials of Demography*. Second Edition. Chapter 9,Pp.191-210, New York: Elsevier Academic Press, Chapter 3, Pp.301-340.
6. Smith, P.C., (1978): Indices of Nuptiality: Asia and Pacific, *Asian Pacific Census Forum*, Vol. 5(2)

Suggested Readings :

1. Agarwala S. N. (1972). *India's Population Problem*. Tata McGraw Hill Publishing Co. Ltd., Bombay, Chapters 6, 7, 8.
2. Bhat, P.N.M. and Halli, S., (1999): Demography of Bride Price and Dowry: Causes and Consequences of the Indian Marriage Squeeze, *Population Studies*, Vol. 53, pp. 129-375.
3. Caldwell, J.C., Reddy, P.H. and Caldwell, P., (1983): The causes of marriage change in South India*, Population Studies*, vol. 37, No. 3, pp. 343-361.
4. Kapadia, K.M. (1966): *Marriage and Family in India*, Oxford University Press, Delhi.
5. Krishnan P and A.K. Kayani (1976). Model Divorce Tables, *Genus,* Vol. 32, No. 1-2, pp. 109-126.
6. Kumar Joginder, Methods of Construction of Attrition Life Tables for Single Population Based on Two Successive Censuses. *Journal of the American*

Statistical Association, Vol. 62, No. 320, 1967 PP 1433-1457.

7. Grabill, W.H., (1945): Attrition Life tables for the single Population, *Journal of American Statistical Association (JASA)*, Vol. 40, pp. 364-375.
8. Lesthaeghe R. (1973). The Feasibility of Controlling Population Growth through Nuptiality and Nuptiality Policies, *In: International Population Conference*, IUSSP, Liege, Vol. 3.
9. Sinha, R.K.,(1992): Impact of Age at Marriage on Fertility and Completed Family Size in Rajasthan*, Journal of Family Welfare*, Vol. 34(1).
10. Sinha, R. K.(1994):*Marriage and Marital Dissolution in India: A Multistate Life-table analysis*, IIPS Research Report series. 1994-95/No. 15, IIPS, Mumbai.
11. Willekens, F.J. (1985). The marital-status life table. In: Bongaarts,J.T. Burch and K.W. Watcher (eds.), *Family demography: Methods and application*. Oxford: Oxford University Press.

MSP-C4 **60 Hours**

MORTALITY, MORBIDITY AND PUBLIC HEALTH

I. Basic Concepts and Measures of Mortality

Need and Importance of the study of Morbidity and Mortality; Sources of morbidity and mortality data and their quality with special reference to the developing countries and India.

Basic Concepts and definitions: Miscarriage, abortion, fetal deaths, still births, live birth, deaths, early and late neonatal death, infant death, child death

Introduction and basic measures of mortality: crude death rate (CDR) and Age-Specific Death Rates (ASDRs) and their relative merits and demerits.

Need and importance of standardization of mortality Ratios/Rates; Direct and indirect techniques of standardization of mortality rates; Decomposition.

Conventional measures of infant mortality (IMR) and its sub-divisions- Neo-natal (early and late) and Post-Neonatal mortality

Need for adjustment of IMR; Numerator and denominator separation factor Approaches for estimating adjusted rate and Lexis diagram; Estimating IMR from large scale sample surveys.

Various measures of pregnancy wastage: Fetal Death Ratio, Still Birth Rate, Peri-natal Mortality Ratio/Rate; and Maternal Mortality Ratio/Rate.

II. Life Tables

Basic concept of a life table; Brief history of life tables; Anatomy of life table; Types and forms of life tables; Application of life table in demographic analysis.

Construction of Life tables based on Age- specific death Rates (ASDRs: Underlying assumptions of life table construction using ASDRs of a community during a specified period; Methods of life table Construction—Conventional approach, and those proposed by Grevillie, and Chiang and Read and Merrell method; Multiple decrement life table

Need for Model Life Tables (MLT) for areas having poor vital registration statistics; Underlying principles of constructing important MLT systems - MLT by United Nation, Coale and Demeny Regional MLT; Brass two- parameter Logit Life table system; and; MLT by WHO

Application of model life tables in demographic analysis for areas having limited/ poor civil registration and age-data

Stable Population Models; Generalized Stable Population Models; Brass Method of Estimating Child Mortality; Indirect Estimation Methods using Age-Distribution at two-censuses; Sisterhood Method for Estimating Maternal Mortality; Bhat's Regression method for estimating maternal mortality

III. Introduction to and Measures of Morbidity

Concepts and definitions of health and morbidity; Need for morbidity indices; Various measures of morbidity: incidence and prevalence rates; Interrelationships between measures of morbidity

IV. Burden of disease

Need for the study of burden of disease; Basic concepts; Compression and Expansion of Morbidity hypotheses; Measures of Burden of Disease; and Current global scenario

V. Infant & child mortality and child survival framework

Importance of infant mortality in population and health; Causes of infant mortality (endogenous and exogenous); Levels and trends of infant and child mortality (global and south Asia/India); and Mosley and Chen' framework for child survival.

VI. Mortality and health transitions

Levels and trends in mortality by developed and developing regions with special reference to India; Age and sex specific mortality with a focus on excess female mortality in selected developing countries; differentials in mortality by place of residence and socio-economic characteristics

Historic mortality transitions as experienced by developed and developing countries with special reference to India; Factors responsible for high mortality in the past; Main reasons for mortality decline in developing countries

Overview of epidemiological transition; Changing disease pattern in developed and

developing countries with special reference to India; Current global mortality scenario; and concepts and overview of health transition

VII. Causes of death

Importance of causes of death statistics; Definition and sources of causes of death statistics; a brief history of the International statistical classification of diseases, injuries and causes of death (ICD); An overview of ICD – X (1990)

Global leading causes of death with special reference to Asia and India; Distribution of deaths by main causes by age, development, life expectancy (UN).

Reading List

Essential Readings :

1. Caldwell, J, Sally Findley, Pat Caldwell and Gigi Santow (1990): What we know about health transition: The cultural, social and behavioural determinants of health.*The proceedings of an international workshop, Vol.1&2, ANU, Canberra*, Health Transition Centre.
2. Mosley, W. H. and L. C. Chen (1984): Analytical framework for the study of child survival in developing countries, *Population and Development Review*10 (Supplementary Copy).
3. Murray, C. J. L., (1994): Quantifying the Burden of Disease: The Technical Basis for Disability Adjusted Life Years, *Bulletin of the WHO*, Vol. 72(3), pp.429-445.
4. Omran, A. R. (1971): The epidemiologic transition: a theory of the epidemiology of population change, *Milbank Memorial Fund Quarterly*, Vol. XLIX, pp. 509-538.
5. Park, J.E. and K. Park (1989): *Text Book of Preventive and Social Medicine (Twelfth Edition),* M/S Banarsidas Bhanot Publishers, Jabalpur (Chapters 2 & 3).
6. F. Ram and K.B. Pathak (1998): *Techniques of Demographic Analysis*, Himalaya Publishing house, Bombay(Chapters 2 & 3).
7. Preston, S. H., Patrick Heuveline and Michel Guillot (2001): *Demography: Measuring and Modeling Population Process,* Blackwell Publishers, Oxford, UK (Chapters 2, 3 & 4).
8. Shryock, Henry S. Jacob Siegel and Associates (1980):*The Methods and Materials of Demography*, Vol. 2, Fourth printing (revised), US Department of Commerce. Washington DC, pp. 389-393, Chapter 14.

9. WHO (1992): *International Statistical Classification of Diseases and related Health Problems*, Tenth Revision, Vol. 1, Geneva.

Suggested Readings :

1. Administrative Staff College of India (2002): A comparative assessment of the Burden of Disease in selected states: Methodology, results, policy and program intervention. *Research Paper No. 2*.
2. Bhende, Asha and Tara Kanitkar (1982): *Principles of Population Studies*, Himalaya Publishing House, Bombay (Chapter 7).
3. Coale, Ansley J. and Paul, Demney (1983): *Regional Model Life Tables and Stable Populations*, Academic Press, New York.
4. Government of India (1994): *National Child Survival and Safe Motherhood Program*, Ministry of Health and Family Welfare, New Delhi.
5. Jagger, C (1999): *Health Expectancy calculation by the Sullivan Method: A Practical Guide*, NUPRI, Research Paper Series No. 68.
6. Murray C. J. L. and A.D. Lopez (1994): Global and regional cause -of-death patterns in 1990, *Bulletin of the WHO,* 72(3): 447-480.
7. Murray C. J. L., J. A. Salomon, C. D. Mathers and A. D. Lopez (2002). *Summary Measures of Population Health: Concepts, Ethics, Measurement and Applications*. WHO, Geneva.
8. Murray, C. J. L., B. D. Ferguson, A. D. Lopez, M. Guillot, J. A. Salomon and O. Ahmad (2003): Modified logit life table system: Principles, empirical validation and application, *Population Studies* 57 (2): 1-18.
9. Pugh, Thomas F. and Brian MacMohan (1970): *Epidemiology: Principles and Methods,* Little Brown Publishers, Boston (Chapters 1 through 5).
10. UNESCAP (1987): Mortality and Health Issues in Asia and the pacific, *Asian Population Studies*, Series No. 78.
11. United Nations (1955): *Age and Sex Pattern of Mortality: Model Life Tables for Under-Developed Countries*, United Nations, New York.
12. United Nations (1973): *The Determinants and Consequences of Population Trends, Vol. I*, Population Studies No.50, Dept. of Economic and Social Affairs, UN, New York (Chapter 5).
13. United Nations (1982): *Model Life Tables for Developing Countries*, United Nations, NewYork.
14. United Nations (1986): *Determinants of Mortality Change and Differentials in*

Developing Countries, the Five-Country Case Study Project, United Nations Dept of Economic and Social Affairs, New York.

15. United Nations (1999): *Health and Mortality Issues of Global Concern*, Proceeding of the Symposium on Health and Mortality, Brussels, 19-22 November 1997.
16. United Nations (1998): *To Young to Die: Genes or Gender*, Dept. of Economic and Social Affairs, United Nations, New York.
17. World Bank (1993): *World Development Report 1993: Investing in Health*, Oxford University Press, New York.
18. World Health Organization (1999): *The World Health Report 1999: Making a Difference*, WHO, Geneva.

MSP-E1.1 **45 Hours**

HEALTHCARE SYSTEMS AND POLICIES

- Identify the structure, components and characteristics of global health care system
- Understanding the needs and goals for various policies related to public health, policy environment, frameworks for policy analysis
- Basic models and functions of health services, health care systems, international experience
- Health infrastructure and health delivery system in India- public, private, NGOs, Indigenous health systems
- National health programmes- Public health preparedness
- Public health system- A re-appraisal and SWOT analysis, a critique on the health delivery system- problems related to structural, functional and management of public health care services
- Health care system- stakeholders in health care system, human capital and health, role of government in providing health care, improving access to health care with quality
- Health care legislations in India: Legal aspect of health care, MTP Act, biomedical waste Rules, COPRA Act, PNDT Act, Transplantation of human organs Act,etc.
- Principles of planning and management of health programmes- monitoring and evaluation- quality assurance- health impact assessment- five year plans
- Heath services- Community needs assessment, Decentralization of health facilities
- Sustainability of public health intervention- Concept and mechanism of sustainability, models and examples of sustainability, community ownership, Public-private mix
- Introduction to health services and research policies - Perspectives-methodological approach
- Major National Health Policies and Missions- NHP-2002, NRHM (2005-12)
- Major public health problems – A critical review and analysis, identification of major areas of public health requiring interventions, ongoing public health interventions in India. Health system reforms and their impact

Reading List

Essential Reading :

1. Lassey M, Lassey W, and Jinks, M. (1997). Health Care Systems around the World: Characteristics, Issues and Reforms. Prentice-Hall, Inc.
2. Graig, Laurene A. (1999) Health of Nations: An International Perspective on US Healthcare Reform. 3rd Edition, Congressional Quarterly, Inc.
3. Bodenheimer, Thomas S., Kevin Grumbach. *Understanding Health Policy*
4. Fort, Meredith, Mary Anne Mercer and Oscar Gish (Editors). *Sickness and Wealth: The Corporate Assault on Global Health*
5. Govt. of India (2002)-National Health Policy-2002, Ministry of Health and Family Welfare, New Delhi.
6. Govt. of India (2005) Report of the National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare, New Delhi.
7. Peters, et.al (2002), Better Health System for India's poor: Findings, Analysis and Options: The World bank, New Delhi
8. Reddy, K.S. et.al (2011)" Towards achievement of universal health care in India by 2020 : A Call of Action", www.thelancet.com
9. Banerjee, D. (1982), Poverty, class and Health Culture in India, Vol. 1 Parchi Prakashan, New Delhi.
10. Indian Council of Social Science Research and Indian Council of Medical Research (1981), Health for All by 2000 A. D., ICSSR, Delhi.
11. Madan, T.N. (1969), "Who Chooses Modern Medicine and Why", Economic and Political Weekly, pp. 1475-84.

MSP-E1.2 **45 Hours**

BIOSTATISTICS AND EPIDEMIOLOGY

Learning Objectives: The disciplines of Epidemiology and Biostatistics create and apply methods for quantitative research in health sciences. The Biostatisticians at Johns Hopkins School of Public Health have rightly said "Our designs and analytic methods enable health scientists and professionals in academia, government, pharmaceutical companies, medical research organizations and elsewhere to efficiently acquire knowledge and draw valid conclusions from their ever-expanding sources of information". The main objective of this course is to equip students with the basic concepts and methods employed in epidemiologic and biostatistical research. At the same time, the course aims to equip the students with recent advances in the fields of Epidemiology and Biostatistics. The idea is to emphasize concepts over details, with recent applications in public health. After going through this course, the students should be capable enough to take up responsibilities and actively participate in academics, government organizations, pharmaceutical companies, health organizations, etc. The introduction of such course is especially very important in India as there is very limited capacity in India at this moment.

I. Basic Concepts in Epidemiology

Introduction: Definition and objectives of epidemiology; Epidemiology and clinical practice; The epidemiologic approach; Infectious disease epidemiology, occupational epidemiology, disaster epidemiology

The dynamics of disease transmission: Modes of transmission; epidemic, endemic and pandemic; Disease outbreak; Determinants of disease outbreak; Herd immunity; incubation period; outbreak investigation; epidemiological modeling.

Identifying the roles of genetic and environmental factors in disease causation: Association with known genetic diseases; Age at onset; Family studies; Interaction of genetic and environmental factors.

Epidemiology and public policy: Epidemiology and prevention; Population versus high-risk approaches to prevention; epidemiology and clinical medicine; Risk assessment; Meta Analysis.

Epidemiological Study Designs: Ecological, Cross-Sectional, Case-Control, Cohort Studies, Randomized Intervention Studies.

Experimental epidemiology; Randomized trials; Clinical Trials- Basic concepts; Definitions; Historical perspectives, Phase I, II, III and IV trials, Protocol development, Use of control arms, Concepts of randomization and blinding, ethical issues

II. Measurement of Health & Disease Burden

Measuring the occurrence of disease: Measures of morbidity - prevalence and incidence rate, association between prevalence and incidence, uses of prevalence and incidence, problems with incidence and prevalence measurements; Surveillance; Quality of life including DALY, HALE, etc., Measures of mortality.

Assessing the validity and reliability of diagnostic and screening test: Validity of screening test – sensitivity, specificity, positive predictive value and negative predictive value; Reliability; Relationship between validity and reliability; ROC curve and its applications; Overall accuracy.

Issues in epidemiology: Association; causation; causal inference; Errors and bias; Confounding; Controlling confounding; Measurement of interactions; Generalizability.

Estimating risk: Estimating association – absolute risk, relative risk, odds ratio; Estimating potential for prevention – attributable risk; comparison of relative risk and attributable risk; Odds ratios for retrospective studies; Odds ratios approximating the prospective RR; Exact inference for odds ratio analysis of matched case-control data.

Modeling of Infectious Disease Process: Infectious diseases of human – malaria, tuberculosis, Hepatitis, HIV/AIDs, Deterministic modeling of infectious diseases

Probit and Survival Analysis Concepts and definition of Survival analysis - Kaplan-Meir, Life table method, Mantel-Haensal, method, Cox proportional hazards method, Dose response analysis.

Reading List

Essential Readings :

1. Last J M: A Dictionary of Epidemiology, ed. 2. New York, Oxford University Press, 1988.

2. Bonita R, Beaglehole R, Kjellstrom T: Basic Epidemiology, ed. 2. World Health Organization, 2006.
3. Park LE, Park K: Textbook of Preventive and Social Medicine. Jabalpur, Banarasidas Bhanot, 1986.
4. Dunn G, Everitt B: Clinical Biostatistics: An Introduction to Evidence-based Medicine. Edward Arnold, 1995.
5. Friedman L M, Furberg C D, DeMets D L: Fundamentals of Clinical Trials. Boston, PSG, 1982.
6. MacMahon B, Pugh T F: Epidemiology: Principles and Methods. Boston, Little Brown, 1970.
7. Gordis L: Epidemiology, ed. 3. Philadelphia, 2004.
8. Rosner B: Fundamentals of Biostatistics, ed. 6, 2006.
9. Altman D G: Practical Statistics for Medical Research, London: Chapman and Hall, 2006.
10. United Nations Department of Economic and Social Affairs: Designing Household Survey Samples. United Nations, 2005.
11. Lee E T: Statistical Methods for Survival Data Analysis, ed. 2. New York, John Wiley & Sons.
12. Goldstein H: Multilevel Statistical Model. London, Institute of Education, 1999.
13. Murray C J L, Chen LC: Understanding morbidity change. In Arthur Kleinmann and Norma C Wane (eds.) Health and Social Change in International Perspective, Harvard Series on Population and International Health, March 1994.
14. Pocock S J: Clinical Trials: A Practical Approach. Michigan, Wiley Medical Publication, 1983.
15. Everitt B S, Pickles A: Statistical Aspects of the Design and Analysis of Clinical Trials, ed. 2. London, Imperial College Press.
16. Wackerly DO, Mendenhall W, Scheaffer RL: Mathematical Statistics with Applications, 7th edition, Wadsworth Publishing Co Inc, 2007.
17. Kutner MH, Nachtsheim CJ, Neter J, Li W: Applied Linear Statistical Models. 5th edition, McGraw-Hill/Irwin, 2005.
18. Gelman A, Carlin JB, Stern HS, Rubin DB, Dunson DB, Vehtari A: Bayesian Data Analysis, 3rd ed. Chapman and Hall, 2013.
19. Van Der Vaart: Asymptotic Statistics. Cambridge University Press, 2000.
20. Groeneboom P: Nonparametric Estimation under Shape Constraints, Cambridge University Press; 1 edition, 2014.

21. Robin H. Lock, Patti Frazer Lock, Kari Lock Morgan, Eric F. Lock, Dennis F. Lock: Statistics: Unlocking the Power of Data,1 edition, Wiley 2013
22. James F. Jekel: Epidemiology, Biostatistics and Preventive Medicine: With STUDENT CONSULT, Elsevier Health-US, 2013.
23. Kestenbaum, Brya: Epidemiology and Biostatistics, Springe ,2009.

SEMESTER - II

MSP-F2 **45 Hours**

ECONOMICS AND GEOGRAPHY

ECONOMICS

Learning Objectives: This course aims to provide students with basic knowledge of micro and macro economics, public finance, economic theories, the structure, characteristics and growth of the Indian economy through the five year plans, policies and issues and economic evaluation of programmes and projects.

Introduction:

1.1 Defining Economics
1.2. Micro and Macro economics
1.3. Basic Economic Activities
1.4. Factors of Production
1.5 Economic Systems

Basic Concepts in Micro Economics:

2.1. Demand, Supply and Prices
2.2. Elasticity of Demand: Price, Income and cross elasticity
2.3. Demand Analysis: Marginal Utility
2.4 Demand Analysis: Indifference Theory
2.4.1. Indifference curves Theory: Properties, Equilibrium effect
2.4.2. Income, Substitution and Price effect
2.5. Basic concepts in theory of production
2.5.1. Concept of Total Product, Average Product and Marginal Product
2.5.2. Law of Diminishing Return

Basic Concepts in Macro Economics:

3.1. Economic and non economic goods
3.2. Basic Concepts in National Income: Concept of GDP, NDP, GNP, NNP, NI, PCI, GDPPCI.
3.3. Theory of consumption and saving: Consumption function, Keynes' psychological law of consumption, concept of APC and MPC, APS and MPS

3.4. Factors affecting consumption function
3.5. Basic concept of Investment

Basic concepts in Public Finance:

4.1 Public Goods and Private Goods
4.2 Externalities
4.3 Public Revenue – Sources
4.4 Public Expenditure – Sectoral spending with emphasis on Health and Education
4.5 Concept and measures of equity in health care

Indian Economy:

5.1 Structure and Characteristics of the Indian economy
5.2 Economic Growth – Progress through the Five Year Plans
5.3. Industrial Policy 1956, 1977 and 1991
5.4. Other Development issues: Poverty and Unemployment

Economic Evaluation of Programmes and Projects:

6.1 Cost-benefit analysis:Concept of direct cost, indirect cost, short run average cost, short run marginal cost, average fixed cost and average variable cost, capital cost, recurrent cost, joint cost, accounting vs. economic cost.
6.2 Economic evaluation: Definition, need for economic evaluation, methods of economic evaluation, cost allocation techniques (top-down and bottom up approach)
6.3 Empirical Evidence from developmental projects.

Reading List:

1. Agrawal, A.N. (2001) Indian Economy: Problems of Development and Planning, Mumbai: Wishawa
2. Ahuja, H.L., Adanced Ecconomic Theory:Micro-Economic Analysis, New Delhi, Chand and Co.
3. Dandekar, V.M., (1996) Indian Economy, Vol 2, New Delhi, Sage Publications
4. Haney, Lewis H., (1949). History of Economic Thought. New York, Macmillan
5. Kapila, Uma (2005) Indian Economy:Issues in Development& Planning and Sectoral Aspects, Academic Foundation
6. Samuelson P.A., (1995). Economics, New York, Tata-McGraw Hill
7. Sury, M.M. (2008), India's Five Year Plans I to XI, New Delhi, New Century

GEOGRAPHY

Learning Objectives: This section of the course intends to make the students of M.A. in Population Studies familiar with basic concepts and approaches that can be applied for studying population phenomena. After going through this course students shall learn about the important geographical features of India, regionalization and administrative set up of India.

Study of man and nature:
Man environment relationship- determinism, possibilism, neo-determinism; Human ecology; Scope of geography.

Geographic approaches:
Exploration and description; quantitative revolution; welfare geography; postmodern philosophy.

Concepts in human Geography:
Space and place; scale; map and mental map; location; interaction and network; innovation and diffusion; geographic clustering, heartland and rim land; frontiers and boundaries; cultural realm and hearth; Global Positioning system (GPS) and Geographical Information System (GIS)-concepts, use reading and interpretations; Concepts of carrying capacity, overpopulation, optimum population and underpopulation.

Indian geography:
Natural regions of India- Macro, Meso and Micro regions- profile and main characteristics
Administrative regions- States, Union territories- boundary changes and its implication for census data, Evolution of Human settlementst: factors, types and patterns
Land resource: Landuse pattern and changes
Agricultural development - Factors, cropping patterns and changes
Industrial development - major mineral resources and industries, inequalities in Industrial development and associated factors
Energy - Resource types, production and consumption patterns, future demand,
Water resources: supply and demand for different activities
Regional inequalities in development -causes and implications
Changing politicalgeography.

Reading List

Essential Readings :

1. Blasil Blackwell Publisher Limited. Edited by R.L. Johnston. (1981) *The Dictionary of Goegraphy.*
2. Harm J. De Blij, Jonh Wiley & Sons (1977). *Human Geography: Culture, Society and Space*.
3. R. Knowled J. Wareing (1977). *Economic and Social Geography, Mode Simple*. Rupa and Co. New Delhi.
4. Majid Husain (2002). *Human Geography*. Rawat Publication, New Delhi.
5. Government of India, *Statistical Abstract of India (2004)*, Central Statistical Organization, New Delhi.
6. Steven J. Steinberg & Sheila L. Steinberg (2006). *Geographic Information System (GIS) for Social Sciences*. Investigating Space of Place. Sage Publication, New Delhi.
7. D.R. Khullar. *India : A Comprehensive Geography*. Kalyani Publishers, New Delhi.

MSP-C5 **60 Hours**

EVALUATION AND ADJUSTMENT OF DEMOGRAPHIC DATA AND POPULATION PROJECTIONS

Learning objectives:
In this course students learn the techniques of evaluation and adjustment of any demographic data, with more focus of age-sex data. After completion of this course students are expected to get a vision to judge the quality of data, comment on it and adjust the data. After learning techniques of evaluation and adjustment of age data, students can proceed for projection techniques.

The objectives of learning the course on population projections are to acquaint students to carry out population projections independently and apply them in other social sector projections.

Course Contents:
Evaluation and Adjustment of Demographic Data:

- Types of errors, coverage and content errors. Sources of errors.
- Examples of data on survey and census data affected by errors.
- Post-enumeration surveys; dual record system.
- Techniques of evaluation of age data using Whipple's index, Myer's index, UN Joint score.
- Quality checks incorporated in survey procedures to minimize errors.
- Smoothing of age data.

Population Estimates and Projections

- Concepts of population projections; population estimates, forecasts and projections, uses of population projections.
- Methods of interpolation; extrapolation using linear, exponential, polynomial, logistics, Gompertz curves.
- Cohort component method: basic methodology; projection of mortality, fertility and migration components; population projections by f United Nations, World Bank and Expert Committees of Government of India.

- Methods of rural-urban and sub-national population projections.
- Methods of related socio-economic projections: labour force, school-enrolment, health personnel and households.

Reading List

Essential Readings :

1. Government of India (2006): *Population Projections for India and States, 2001-2026.* New Delhi: Office of the Registrar General.
2. Navaneetham Kannan and George Groenewold, (1998): *The Projection of Populations: Data Appraisal, Basic Methods and Applications,* Population and Sustainable Development Teaching Texts, Thiruvananthapuram: Centre for Development Studies.
3. Jacob S. Siegel and David a. Swanson (2004): *The Methods and Materials of Demography*, Second Edition, Chapters 1, 2, 3, 7, 9,10, Elsevier Science, USA.
4. John Weeks (2005): *Population: An Introduction to Concepts and Issues*, Wordsworth Learning. Singapore 9th edition.

MSP-C6 **60 Hours**

INTRODUCTION TO DEMOGRAPHIC AND STATISTICAL SOFTWARES

1. Basics of MORTPAK4, SPECTRUM and applications.
2. Introduction to SPSS-facilities, creating database structure, data entry, specifying scales, validation of data entry, importing and exporting data. Data Manipulation – recoding creating new variable, sorting, filtering and selection of specific data, generating simple frequencies, use of syntax editor. Correlation and regression analysis – interpretation and regression diagnostic test.
3. Introduction to STATA, generating, variables, commands and do file editor. Survey analysis – estimation of mean, proportion, design.
4. Multivariate analysis – concepts and interpretation of results of multiple regression, logistic regression, ANOVA, with and without interaction. Survival analysis-Kaplan Meier, Cox regression-test of proportionality and heterogeneity.
5. Large scale data handling – (using NFHS, DLHS, NSSO) Merging, splitting data and formatting.
6. Introduction to GIS and illustration.

Reading List

Essential Readings :

1. *SPSS 14.0 Brief Guide* – SPSS Inc.
2. *SPSS regression models 14.0* - SPSS Inc.
3. *SPSS advanced models 14.0* - SPSS Inc.
4. *Stata user's guide: Release 10.,* 2nd Edition. Stata Press.
5. *Stata survey data reference manual: Release 8.,* 2nd Edition. Stata Press.
6. Cromley, Ellen K. and McLafferty, Sara L., (2002): GIS *and public health.* Guilford Press, New York.

MSP- C7 **60 Hours**

MIGRATION AND URBANIZATION

Learning objectives : The aim of this course is to familiarize the M.A./M.Sc. students in Population Sciences about the demographic aspects of migration, spatial distribution and urbanization. On completion of this course students are expected to learn about the scientific definitions of migration, urbanization and spatial distribution, their patterns, trends, causes and consequences. Students are also expected to learn about the data sources and their constraints and the techniques to analyse migration, spatial distribution and urbanization.

I. MIGRATION

i. Concepts, pattern, determinants and consequences of migration and issues related to migration

ii Concept of mobility and migration, sources and quality of data, types of migration, census definition of migrants and its limitations.

iii Internal Migration: Internal migration patterns and characteristics in developing countries with a special focus on India.
Determinants of internal migration: Causes of migration at the place of origin and at the place of destination
Consequences of internal migration: demographic, economic, social and political consequences at the individual, household and community level

iv International migration

Sources of international migration data and problems.
Patterns of international migration: Historical and recent trends, permanent immigrants, Indian Diaspora and people of Indian origin, labour migration, brain drain, refugee migration and Illegal migration.

Causes and consequences of international migration

v Migration theories and models
Ravenstein's Laws of Migration

Everett Lee's Theory of Migration
Mobility Field Theory
Lewis-Fei-Ranis Model of Development
Todaro's Model of Rural-Urban Migration

vi Measures of Migration
Direct estimation of lifetime and inter-censal migration rates from census data
Indirect measures of net internal migration: Vital Statistics Method, National Growth Rate Method and Census and Life Table Survival Ratio methods
Methods of estimating international migration

vii Migration surveys

II. SPATIAL DISTRIBUTION AND URBANISATION

i Spatial Distribution
Spatial distribution: importance and pattern, factors affecting spatial distribution of population: physical, economic, social factors and Govt. policies

ii Urbanization
Urbanization definition and Importance; Important aspects of urbanization process-level and tempo of urbanization, urban population growth and its components, urban size class structure; Data sources; Definitional and conceptual problems; Definition of urban and other associated urban concepts in Indian census; Forces of urbanization and components of urban population growth in developed countries, suburbanization and phenomena of urban turnaround; Current urbanization process in developed and developing countries with special focus on India, Kingsley Davis model of urbanization process; Forces of urbanization and components of urban population growth in developing countries, over urbanization phenomena and urban primacy, Major urbanization problems and policies in developing countries with focus on India.

iii Measures of Spatial Distribution and Urbanization
Selected measures of concentration of population-Density, percentage distribution and dissimilarity index; Selected measures of Degree and tempo of urbanization; selected measures of growth and distribution of urban population-Rank-Size rule and Primacy Index, Lorenz curve and Gini's concentration ratio.

Reading List

Essential Readings :

1. Cohen, Robin, (1996): *Theories of Migration,* The International Library of Studies on Migration, Edward Elgar, Cheltenham
2. Eduardo Arriaga, (1975): "Selected Measures of Urbanization", in Sydney Goldstein and David Sly (Eds.) *Measures of Urbanization and Projections of Urban Population*, IUSSP Belgium
3. Kingsley, Davis, (1972): *World Urbanization, 1950-70*, Vol. II, Analysis of Trends, Relationship and Development, Population Monograph Series 4 and 9, University of California, Berkeley
4. United Nations, (2004): *World Urbanization Prospects, The 2003 Revision*, New York
5. United Nations, (1974): *Methods of Measuring Internal Migration,* Manual VI, UN, New York.

Suggested Readings :

1. Oberai, A.S. (1987): *Migration, Urbanization and Development,* International Labour Office, Geneva
2. Gavin Jones and Visaria, Pravin, (Eds.), 1997: *Urbanization in large developing countries – China, Indonesia, Brazil and India,* Clarendon Press, Oxford
3. Mitra R. G., (2002): *Understanding Patterns of Migration from Census 2001 Data*, Population Stabilization and Development, Council of Cultural Growth and Cultural Relations, Cuttack
4. Shryock, Henry S. Jacob S. Siegel and Associate, (1980): *The Methods and Materials of Demography* Vol.1 U.S. Bureau of the Census, Washington D.C.
5. Todaro, Michael P.(1976), *Internal Migration in Developing Countries*, International Labour Office, Geneva
6. United Nations, (1979): "Trends and Characteristics of International Migration since 1950" *Demographic Studies* No. 64, UN, New York
7. United Nations, (1983): *Determinants and Consequences of Population Trends*, Vol 1, UN,New York, Chapter-VI.

MSP-E2.1 **45 Hours**

HISTORICAL DEMOGRAPHY

I. Introduction to historical demography

Introduction to historical demography: Meaning, Scope, and Importance; Difference between History of Demography, Demographic History and Historical Demography; Limitations of Research in Historical Demography. Development of historical demography (Europe and Asia).

II. Data Sources, Methods and Approaches

Data Sources: Paris registers, Population registers, Census, Vital registration data, Bills of mortality, Fiscal documents, Military records, Inventories of properties, Genealogies, Marriage practices, Archaeological remains, Administrative geography, Colonization of new land, Cemetery data, Traveler's tales.

Approaches: Family reconstitution; Cross checking the information from different sources. Back Projection, and Generalised Inverse Projection, Other Methodological Developments

III. Evolution of human and peopling of the earth

Evolutionary Process and Emergence of human (Darwinism, Mendel, Lamarckism); Historical trend and pattern of migration and distribution of population; Historical evolution of towns and peopling of the world, Industrial and agricultural revolution and peopling of the earth

IV. India's demographic history

Historical sources of population data, Population in India from pre-historic to modern time; Peopling in India and racial classification; Peopling in India and linguistic classification; Indian great famines and its implication on mortality; family transition and status of women from historical perspective; Transition from traditional family planning methods to modern methods and health practices in India – a historical perspective

Reading List

Essential Readings :

1. Davis, Kingsley, The Population of India and Pakistan, Princeton, Princeton University Press, 1951.
2. Tim Dyson (ed.), India's Historical Demography: Studies in Famine, Disease and Society, London, Curzon, 1989.
3. Glass D.V. & Eversley, D.E., Population in History: Essays in Historical Demography, London, Edward Arnold, 1965.
4. Hollingsworth, T.H., Historical Demography: The Sources of History, Studies in the Uses of Historical Evidence, London, 1969.
5. Maharatna, Arup, Demography of Famines: An Indian Historical Perspective, Delhi, 1996.
6. Willigan, J. Dennis, Lynch, Katherine A., Sources and Methods of Historical Demography, Academic Press, New York, 1982.

Suggested Readings :

1. Akerman, S., "History and Demography: An Evaluation of the Family Reconstitution Technique" in A.E. Andersson and I. Holmberg (eds) Demographic, Economic, and Social Interaction, Cambridge, Ballinger Publishing Company, 1977.
2. Harris, P.M.G., History of Human Populations, Vol.II (Migration Urbanization and structural change) London: Praeger, 2003.
3. John Knodel, "Two and a Half Centuries of Demographic History in a Bavarian Village". Population studies Vo1.XXIV No.3, Nov. 1970, pp. 353-376.
4. Kertzer, David I., "Qualitative and Quantitative Approaches to Historical Demography", Population and Development Review, Vol.23 (4). Dec. 199— (839-84), 1997.
5. Krishnan, P., "Historical Demography Through Literature: Preliminary Report on Indian Historical Demography", Paper presented in the Session Historical Demography, IUSSP Meeting, Florence, Italy, June, 1985.
6. Paul E.Vincent, "French Demography in the Eighteenth Century" Population Studies Vol.I, 1947-48. Pp.44-71.
7. Razzell, P.E., "The evolution of Baptism as a form of Birth Registration through Cross Matching census and Parish Register Data: A study in Methodology" Population Studies Vol.26, No.1. March 1972, pp.121-146.

8. Saito, Osamu, Historical Demography: Achievements and Prospects, Population Studies, Vol.50 (3—(53), 1996.
9. Srivastava, H.C., "Registration of vital Events in Goa- A study of current system in Retrospect", Artha Vijanana, Vol. XIII, No.4, Dec. 1971.
10. Vinovskis, Maris A., Studies in American Historical Demography, Academic Press, New York, 1979.
11. William H. Howells, "Estimating Population Numbers Through Archeological and Skeletal Remains" in Robert F. Heizar and Sherburne F. cook. The application of Quantitative methods in Archeology, Viking Fund Publication in Archeology, No.28, 1960. pp. 158-159.

MSP-E2.2 **45 Hours**

SPATIAL DEMOGRAPHY

I. Concepts and Theories

Demography as a spatial science; difference between spatial demography and population geography; Spatial pattern and spatial process; location, distance and area; Distance and decay relationship and spatial hierarchy; space, place and region; Type of spaces- concrete and abstract space; absolute, relative and relational spaces.

Understanding demographic process by geographical scale; nature of disaggregated data- Census and secondary sources; Linking micro and macro demography in a spatial frame.

Application of spatial frameworks to demographic process; Space, culture and fertility; Spatial pattern of mortality and diseases; Distance as factor in access to health care and health planning; Migration and distance- gravity model; space, culture and migration; urban sprawl and sub-urbanization.

II. Statistical and Geospatial Data and Software

Spatial Concepts and Cartography: Spatial parameters: Site and location; Scale; Plane and spherical coordinate, Map Projection-UTM, Types of maps: cadastral, toposheet, thematic, digital; Representation of spatial and non spatial data;
Introduction to geospatial software: GIS: discrete data: point, and polygon data, Raster and vector data, layouts preparation. Geocoding and basics of digitization in ArcGIS
Introduction to Geoda: ESDA in (Exploratory Spatial Data Analysi); Local Indicators of Spatial Association (LISA)
Statistical Concepts: Bar diagram, Frequency polygon, Frequency curve; Test of significance, confidence intervals, Univariate and Multivariate Statistics: Correlation and Regression, Matrix algebra; Auto-correlation; kriging, Moran's I index
Introduction to Statistical software: SPSS, STATA, R

III. GIS and Spatial Analysis of demographic data

Representation of statistical data and automated cartography (Lab based exercises):

a) Population distribution map of India using dot and sphere/circle, cubes, combined; Cartograms
b) Density map by Choropleth and population density gradient by Isopleth;
c) Fertility, mortality and natural growth of population by Polygraph.
d) Measurement of population concentration by cumulative curve.
e) Migration flow by Carogram

Concept and application Models:

a) Spatial Lag and Error Regression Modeling;
b) Multilevel modeling (hierarchical linear modeling);
c) Geographically Weighted Regression;
d) Spatial Pattern Analysis;
e) Urban and city level projection

Reading List

Essential Readings :

1. A znselin, L. (2005). Exploring Spatial Data with GeoDa: A Wookbook. UC Santa Barbara, CA: Center for Spatially Integrated Social Science. available on http://geodacenter.asu.edu/.
2. Bailey, T. and Gatrell, A. C. (1995): Interactive Spatial Data Analysis. Harlow, Longman.
3. Barbara E., Ronald R. R., Stephen J. W., Tom P. E. and Sara R. C. (1997). *Geographic Information Systems, Spatial Network Analysis, And Contraceptive Choice*. Demography. 34(2): 171-187.
4. Bonham, Carter G.F. (1995): Information Systems for Geoscientists–Modelling with GIS. Pergamon, Oxford.
5. Chen, X., Orum A.M., and Paulsen K.E. (2013). Introduction to Cities: How Place and Space shape Human Experience. West Sussex, Willey-Blackwell.
6. de Castro M. C. (2007). *Spatial Demography: An Opportunity to Improve Policy Making at Diverse Decision Levels*. Population Research and Policy Review 26: 477-509.

7. Dorling, D. and Fairborn, D. (1997): Mapping. Ways of Representing the World. Longman, Harlow.
8. ESRI (1993): Understanding GIS. Redlands, USA
9. Fraser Taylor, D.R. (1980): The Computer in Contemporary Cartography. New York, John Wiley and Sons,
10. Griffith, D. A. and Amehein (1997): Multivariate Statistical Analysis for Geographers. Englewood Cliffs, New Jersey, Prentice Hall.
11. Goodchild, M.F. and Janelle, D.G. (eds). (2003). Spatially Integrated Social Science: Examples in Best Practice. Oxford University Press.
12. John R. Weeks. 2004. The Role of Spatial Analysis in Demographic Research. Chapter 19 (pp. 381-399) in M.F. Goodchild and D.G. Janelle (eds.) (2004) Spatially Integrated Social Science New York, NY, Oxford University Press.
13. Kurland K. S., Gorr W. L. (2007). GIS Tutorial for Health. Redlands, CA, ESRI Press.
14. Lo, C.P. and Yeung, A. K. W. (2002): Concepts and Techniques of Geographic Information Systems. New Delhi, Prentice Hall of India.
15. Massey, D. (2008). for space. New Delhi, Sage Publications Ltd.
16. Monkhouse, F.J. and Wilkinson, H. R. (1962). Maps and Diagrams. London, Methuen and Company Ltd.
17. Parker R. N., Asencio E. K. (2008). GIS and Spatial Analysis for the Social Sciences: Coding, Mapping, and Modeling. New York, NY, Routledge/Taylor & Francis.
18. Paul V. (2007). *Demography as a Spatial Social Science*. Population Research and Policy Review 26: 457-476. (plus Introduction to the special issue of PRPR on Spatial Demography) pp. 455-456).
19. Editor. (2007). *Introduction to the Special Issue*. Population Research and Policy Review 26: 455-456).
20. Reibel, Michael, (2007). *Geographic Information Systems and Spatial Data Processing in Demography: A Review.* Population Research and Policy Review 26: 601-608.
21. Robinson, A. H. H., Sale R., Morrison J. and Muehrcke, P. C (1984) Elements of Cartography. New York, John Wiley and Sons.
22. Shaw, G. and Wheeler, D. (1994). Statistical Techniques in Geographical Analysis. Englewood Cliffs, New Jersey, Prentice Hall.

23. Soja, E. W. (1996). Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places. Wiley-Blackwell
24. Sparks Corey. (2013). *Spatial Analysis in R: Part 1*. Spatial Demography 1(1) 131-139
25. Sparks Corey. (2013). *Spatial Analysis in R: Part 2*. Spatial Demography 1(2) 219-226
26. Zhu E J. and Chi G. (2008). *Spatial Regression Models for Demographic Analysis*. Population Research Policy Review 27:17–42 DOI 10.1007/s11113-007-9051-8

MSP-E3.1 **45 Hours**

HEALTH ECONOMICS AND HEALTH FINANCING

Learning objectives:

1. To familiarize the students with basic concepts, theories and models in health economics and how to apply the economic tools in analyzing the structure and performance of health care sector.
2. To provide an understanding on the functioning of health care markets and health care industry.
3. To orient and encourage the students to understand main economics of health and micro financing of health care.

I. Introduction to Health Economics

Defining health economics, why health economics is important, basic concepts in microeconomics, health across world and over time, scope of health economics, map of health economics, basic questions confronted by health economist, concept of efficiency and equity in health, Production Possibility Frontier (PPF), economic gradient of health, causation of income and health, Preston Curve, economic models and analysis, expenditure function, Theories of X and Y, positive and normative economics.

II. The Demand for Health and Health care

What is Health and Good Heath, Utility Analysis, Health as a form of human capital, What is Medical Care, The production of Good Health, Empirical evidences in the production of health, Health as human capital, Grossman Model, The Demand for Health Care, Demand function for health, Economic and non-economic factors of health care, Fuzzy Demand Curve, Price and income elasticity of demand for health care, Important consideration in estimating health care demand elasticity, provider's behavior, Empirical findings, externalities and market failure.

III. Medical Care, Production and Cost

The Short-Run Production Function of the Medical Firm, Total Product, Marginal Product and Average Product Curve, Law of diminishing marginal

productivity, The importance of costing in Health Economics, Short-run cost theory of medical firm, short run cost curves, Cost analysis, Implicit and explicit cost, factor affecting short-run cost curves, cost minimization, constraints in measuring health cost

IV. Measuring Health Inequalities

Measurement of health inequality: A Prelude

Why measure health inequality; Health equity and inequality: Concept and definitions; Understanding of the concepts such as need, access and utilisation; cardinal and ordinal health variables

Black Report and Beyond

Historical Background of Black Report, Explanation for social class differences, major empirical theme since Black report

Measures of health inequality:

Measures of health inequality: Index based approach; Axiomatic approach to measurement; Individual-mean and inter-individual comparison; WHO Index, Coefficient of Variation, Generalised Entropy Index, Lorenz Curve and Gini Coefficient

Measuring socioeconomic rank related health inequality

Slope index of inequality; Relative index of inequality; Concentration curve and concentration index: various ways of computing; Standardization; Inequality aversion; Normalised and Generalised concentration index; Corrected concentration index

Measuring inequality in healthcare utilisation

Horizontal inequality; Vertical inequality; Regression based approach; Measurement of horizontal inequalities; Group inequality, common measures, Gini type index

V. Health Financing

Health financing in low, middle and high income countries, demographic transition, epidemiological transition and health expenditure, disparity in disease burden and percapita health spending, sources of health care in India, out-of-pocket expenditure on health care, catastrophic health expenditure, approaches in measuring catastrophic expenditure, impoverishment, health

care payment and poverty, national and regional patterns of catastrophic health spending, determinants of catastrophic health spending, Drivers of health care expenditure, health financing in India, Equity in health care finances, Willingness to pay for health care, User charges as determinant of health financing

VI. Measuring Health

Importance of Measures of general health status and quality of life, Measuring health outcomes, human life and Quality Adjusted Years of Life, Quality Adjusted Life Years (QALYs) and Health Year Equivalents (HYEs), Economics of Prevention and Public Health – Economic evaluate on of prevention programs (include ADL and IADL for aged)

VII. Health Insurance

Health care system, a model of health care system, defining health insurance, need for health insurance, type of health insurance, demand for private health services, factors affecting the quantity demanded of health insurances, moral hazards, deductibles, co-insurance, managed care, adverse selection, loading fees, employed based insurance, reimbursement, selection effect, intermediary agent, regulation of health insurance, Need for Government intervention, Trends of health insurance, Coverage of health insurance in India

VIII. Economic Evaluation

What is economic evaluation? Cost analyses; direct cost, Indirect cost, tangible cost, capital cost, fixed cost, variable cost, Opportunity cost, average cost, marginal cost, Incremental cost, steps in cost analyses: Identification, measurement and valuation, Various types of economic evaluation used in health care: Cost effectiveness analysis (CEA) Cost-Benefit Analysis (CBA), Divergence between social and private costs and benefits in health care, Limitations of economic evaluation, Consumer Impact Assessment.

Reading List

Essential Readings :

1. Rexford E. Snterre and Stephen P. Neun, Health Economics: Theories, Insights and Industry Studies, Thompson South – Western, 3rd Edition (614, San/Hea, 073226) Note: 4th Edition is out in 2007 (ISBN: 032432068X; ISBN13: 9780324320688)

2. Drummond MF, Sculpher MJ, Torrance GW, O'Brien B, Stoddart GL, eds. Methods for economic evaluation of health care programmes, Third Edition, Oxford University Press, 2005.
3. O'Donnell O, Doorslaer E v, Wagstaff A and Lindelow M. Analyzing Health Equity Using Household Survey Data, AGiide to Techniques and Their Implementation http://www.sciencedirect.com/science/handbooks 15740064
4. Culyer A J and J P Newhouse, 2000, The state and scope of health economics, Handbook of Health Economics, Volume 1A, Eds. Culyer and Newhouse, Elsevier, 2000.
5. Dewar D M , Essentials of health economics, Chapter 3
6. Ringel etal (2005) The Elasticity of Demand for Health Care A Review of the Literature and Its Application to the Military Health System https://www.rand.org/content/dam/rand/pubs/monograph_reports/2005/MR1355.pdf
7. Grossman (1982), On the concept of Health capital and Demand for Health, Journal of Political Economy, 80(2)
8. Macintyre S (1997). The Black Report and Beyond-What are the issues, Social Science, Medicine, 44(6):723-745
9. Wagstaff A, P. Paci and E van Doorslaer (1991), On the measurement of inequalities in health, *Social Science and Medicine* 33(5), 545-557
10. O'Donnell O. et al (2008), *Analysing health equity using household survey data: A guide to techniques and their implementation*, The World Bank
11. Wagstaff, Adam & van Doorslaer, Eddy, 2000. "Chapter 34 Equity in health care finance and delivery," Handbook of Health Economics, in: A. J. Culyer & J. P. Newhouse (ed.), Handbook of Health Economics, edition 1, volume 1, chapter 34, pages 1803-1862 Elsevier
12. Erreygers, G (2009b), Correcting the Concentration Index. *Journal of Health Economics* 28, 516–520.

Recommended journals

1. Journal of Health Economics
2. Health Economics
3. The Lancet
4. Health Policy and Planning

MSP-E3.2 **45 Hours**

URBANIZATION, SPACE AND PLANNING

I. Urbanization and Space

Urbanization and space: concepts and forms (formal and informal spaces); Differences between space, place and region; urbanization and space interaction: gravity model, distance decay model, forces of concentration and dispersion, urban agglomeration and spatial economy; Access to urban and right to the city

II. Evolution of Spaces of Settlements

Settlement: evolution, characteristics and factors; settlement pattern and hierarchy; Urban morphology; Change in urban land use and population density; Rural-urban relationship: dichotomy or continuum; Role of urban centres in rural development.

III. Urban and Regional Planning

Planning: Definitions, concepts, purpose, types and levels; geography/ demography and planning relationship.

Regional development/planning: Region: concept and definition, types (formal, functional and planning); Need for regional planning; Types of regional planning; Spatial structure of regions,

Theories of regional development: Stages of development, economic base theory, Industrial location theory, Growth Pole theory; Core-periphery interactions.

Regional planning in India; Planning regions in India; Regional disparity in development; Special area development planning (hilly area development planning, (North-Eastern regional council, Mumbai Metropolitan Regional Development Plan).

Urban Planning: Concepts; history and origins of urban planning; pioneers

of urban planning; types of urban plans: New towns, neighborhood, garden city, green belts; healthy urban planning, WHO concept of healthy city, livable city, sustainable city.

Urban policy since independence, five year plans, important urban plans (New Delhi, Navi Mumbai, Chandigarh); Smart Cities Mission; HRIDAY, AMRUT, PURA, RURBAN mission

IV. Challenges in Urban planning

Recent urban policies and programmes; Urban redevelopment; Urban poverty, urban housing and real estate, Slums and slum rehabilitation, The case of SRA in Mumbai; Urban pollution, Solid waste management; Management of migrants

V. GIS and Urban and Regional Planning

Application of GIS in urban and regional planning.

Reading List

Essential Readings :

1. Friedman, John and William Alonso (1964) *Regional Development and Planning: A Reader,* The MIT Press, Massachusetts.
2. Friedman, John (1966) *Regional Development Policy: A Case Study of Venezuela,* MIT Press, Massachusetts.
3. Chaudhuri, J. R. (2001) *An Introduction to Development and Regional Planning,* Orient Longman, Hyderbad.
4. Chand, M and V.K. Puri, (1983), *Regional Planning in India, New Delhi,* Allied.
5. Friedman, J and W. Alonso, (eds: 1969), *Regional Development and Planning: A Reader,* Cambridge, MIT Press.
6. Lefebvre, H (1991) *The Production of Space, Blackwell,* Oxford.
7. Hall, P, (1992), *Urban and Regional Planning,* Third Editions, London, Routledge.
8. Harvey, D. (2008) 'The Right to the City', *New Left Review 53* (September-October): 23-40.
9. Harvey, D. (2012) *Rebel Cities: From the Right to the City to the Urban Revolution*, Verso, London.
10. Husain, M, (1994), *Human Geography*, Jaipur, Rawat.
11. Leong, Goh C. and G.C. Morgan, (1982), *Human and Economic Geography,* Singapore, Oxford University Press.

12. Singh, R. Y. (1994), Geography of settlements, Rawat, Jaipur.
13. Ginsburg, N., Bruce Koppel and T.G. Mc Gee (1991) *The Extended Metropolis: Settlement Transition in Asia*, University of Hawaii Press, Honolulu.
14. Nath, V. (1971) Regional Development Policies ", Economic and Political Weekly, 6(30-32): 1601-1608.
15. Lo, C.P. and Yeung, A. K. W. (2002): Concepts and Techniques of Geographic Information Systems. Prentice Hall of India, New Delhi.
16. Nyerges, Timothy L. and , Jankowski Piotr (2010): Regional And Urban Gis: A Decision Support Approach, Rawat Publication, Jaipur. ISBN: 9788131603697, 8131603695

Suggested Readings :

1. Friedman, J and Clyde Weaver, (1979), *Territory and Function: The evolution of regional planning*, London, Edward Arnold.
2. Kawashima, T and P. Korcelli, (1982), *Human Settlement Systems: Spatial Patterns and Trend*, Luxemburg, IIASA.
3. Knowles, R and J. Warling, (1983), *Economic and Social geography: Made Simple*, London, Heinemann.
4. Misra, R.P, (1992), *Regional planning: Concepts, Techniques, Policies and Case studies*, New Delhi, Concept.
5. Sarin, M, (1982), *Urban Planning in the Third World: The Chandigarh Experience,* London, Manshell.
6. MMRDA(2016), Mumbai Metroplotan Regional Development Plan 2016-2036 MMRDA, Mumbai.
7. UNEP and others (2007), Livable Cities: The benefits of environmental planning, The Cities Alliance, Washington. http://www.citiesalliance.org/idex.html.

SEMESTER - III

MSP-C8 **60 Hours**

GENDER AND REPRODUCTIVE HEALTH

GENDER

Learning objectives : The objective of this section is to impart knowledge to students on gender issues related to population, development and health. The main goal is to build skills for students to analyze and understand evidence relating to institutional context of gender and gender-based inequalities and linkages between gender, population, development and reproductive health.

I. Basic terms and concepts

Importance of the study of Gender Issues in Population Studies; Emergence of the Gender Issues as an important area of concern; Differences between sex and gender.

Definitions, Concepts and Terminologies: gender, unequal gender relations, gender equity, gender disparities, gender inequalities, gender main streaming, gender sensitive planning and gender balance.

Patriarchy and matriarchy, kinship structure and gender roles; gender stratification in traditional and modern societies.

II. Autonomy, Empowerment and Status of Women

Autonomy, Empowerment and Status of Women: Concepts, definition and measurement; various indicators and their merits and demerits; gender sensitive development and health intervention models and programme; status of women and population dynamics: Inter-linkages.

III. Social Institutions and Gender Inequalities

Gender and social institutions in India: Religious, Caste, Family, Society, Marriage customs and patterns, dowry system, segregation and seclusion of women - Purdah system. Implications for sex ratio trends and patterns in India; Son Preference, Desired sex composition of children, child sex ratio, sex ratio at birth and sex selective abortion.

Gender inequalities in health: gender differentials in nutrition and health, mortality differentials by sex (children, adults, and aged) and gender inequalities in health care utilization.

Gender inequalities in employment, education, in important decision making process and in workplace, undercounts of women's work in GDP. Gender disparities in access to resources- practice to relating to property inheritance, political representation, and female headship.

IV. Gender, Development and Reproductive Health

Gender in development and reproductive health – key issues relating to equal access participation in development, and control over capital. Right-based approach to gender equity and reproductive health and HIV/AIDS.

Gender as a key determinant of vulnerability to poverty, gender based violence and health implications.

V. Policies and Programmes for Addressing Gender Disparities

Gender and mass media: Language, image and portrayal of women in different mass media and the changes over the time.

National programmes, policies and laws for empowerment of women.

Reading List

Essential Readings :

1. Basu, Alaka M., (1992): *Culture*, *The Status of Women and Demographic Behaviour*, Oxford University, New York.
2. Dyson, Tim and Mick Moore, (1983). "On Kinship structure, female autonomy, and demographic behaviour in India", *Population and Development Review* vol. 9(1), pp. 35-60.
3. Ellsberg Mary and Heise Lori L. (2005) *Researching violence against women: A practical guide for researchers and activists*. WHO and Path, Washington D.C.
4. Folbre, Nancy. (1992). Improper arts: Sex in classical political economy. *Population and Development Review*. 18(1): 105-112.
5. Gita Sen, Adreinne Germain and Lincoln C. Chen, (Eds.), (1994): *Population Policies Reconsidered: Health and Empowerment and Rights*, Harvard University Press, Harvard.
6. Jeffery Patricia and R. Jeffery. 1997. *Population Gender and Politics: Demographic change in rural north India.* Cambridge University, Cambridge.

7. Miller, Barbara, D.(ed) (1993) *Sex and Gender Hierarchies*, Cambridge University Press, New York.
8. Hess, B.B. and M.M. Ferree. (1987). *Analyzing Gender: A Handbook of Social Science Research*. Sage Publication, London.
9. United Nation. 2001. *Population, Gender and Development: A Concise Report*. UN, Economic and Social Affairs (Dept. of), New York
10. World Health Organization. (1998). *Gender and Health. Technical paper* WHO/FRH/WHD/98. (Website: www.who.int)
11. World Bank. (1991). *Gender and Poverty in India*. World Bank, Washington.
12. World Health Organization *(2003): Comparative Evaluation of Indicators for Gender Equity and Health*, Women and Health Programme, Centre for Health Development, Kobe, Japan.
13. William Joan. 1989. Deconstructing Gender, 87 Michigan L Rev. 797. *Law Journal Article*

Suggested Readings :

1. Agnes, Flavia. (2000). Law and gender inequalities: the policies of women's right in India. Oxford, New Delhi.
2. Anker, R.(1997). *Gender and Jobs: Sex Segregation of Occupations in the World*, ILO, Geneva.
3. Balk, Deborah, 1997): "*Defying Gender Norms* in Rural Bangladesh: A Socio demographic Analysis". *Population Studies* Vol.51, pp. 153-172.
4. Bandhopadhyay, D. 2000. Gender and governance in India. *Economic and Political Weekly*. 35(3): 2696-269xxx).
5. Basu, Alaka Malwade. 2000. Gender in population research: Confusing implications for health policy. *Population Studies*. 54: 19-22.
6. Bhasin K. 1993. *What is patriarchy?,* Kali for Women Publishers, New Delhi.
7. Bhasin K. (2000). *Understanding Gender*, Kali for Women Publishers, New Delhi.
8. Das Gupta, Monica, 1987. Selective discrimination against female children in rural Punjab, India. *Population and Development Review*, 13(1): 77-100.
9. Doyal L.(1995) What Makes Women Sick: Gender and the Political Economy of Health. London, Macmillan.
10. Dreze, Jean and Sen Amartya, (1995): *India: Economic and Social Opportunity*, Oxford University Press, New York.

11. Harriet B. Presser, (1997): Demography, Feminism and the Science-policy Nexus, *Population and Development Review* Vol. 23(2), pp. 295-331.
12. Jeffery, Roger and Basu, Alka M. (Eds.), (1996): *Girls Schooling, Women's Autonomy and Fertility Changes in South Asia*, Sage Publications, New Delhi.
13. Jejeebhoy S. 1996. *Women's Education, Autonomy and Reproductive Behavior: Assessing what we have learned*. East West Centre, Hawaii.
14. Reeves Hazel and Baden Sally (2000): *Gender and Development: Concepts and Definitions*, Report No. 55, Bridge (development- gender) Institute of Development Studies, University of Sussex, Brighton BN1 9RE, UK.
15. Sonya, Andermahr, Lovell Terry and Wolkowitz, Carol, (1997): *A Glossary of Feminist Theory*, Arnold-Hodder Headline Group, London.
16. Sopher, David, (1980). *An Exploration of India: Geographical Perspective on Society and Culture,* Cornell University New York

REPORDUCTIVE HEALTH

Learning Objectives: This section aims to introduce the concepts and methods used in reproductive health research and to equip students with the principles, methods and research skills necessary to conduct policy relevant research. It provides a non-clinical foundation in the main aspects of reproductive health: family planning, obstetric health and STI/HIV/AIDS.

I. Introduction to reproductive health

- Definition and rationale of RH approach,
- Evolution of ideas about reproductive health
- Components of RH and life cycle approach of RH
- Recommendations from ICPD

II. Physiology of human reproduction

- Male and female reproductive system; Conception, Pregnancy
- Customs, and taboos related to menstruation and puberty in different societies

III. Maternal and obstetric morbidity

- Maternal morbidity, safe motherhood programmes, emergency obstetric care
- Cultural practices during pregnancy, childbearing and its impact on health of women
- Effects of maternal death on family
- Strategies to reduce maternal morbidity and mortality

IV. Abortion and related issues

- Spontaneous, induced abortion, legal and illegal abortions, safe and unsafe abortions and consequences of unsafe abortions
- Laws regarding abortion.

V. Infertility

- Methodological issues in measurement of infertility, Sexual dysfunction, behavioural risk factors, and consequences, Assisted reproductive technologies and its use and misuse; component of infertility in government programmes.

VI. Gynecological and contraceptive morbidity

- Anemia, Breast, Cervical, Ovarian, Prostate Cancer; Behavioural risk factors
- Contraceptive morbidity related to different methods.

VII. Reproductive Tract Infection/Sexually Transmitted Infections and HIV/AIDS

- Issues related to HIV infection; socio-cultural, medical, public health and psychological perspectives
- Social epidemiological questions concerning HIV infection in Asian countries with emphasis on India
- Coping with HIV/AIDS infection: Psycho-social and economic issues
- Reproductive Tract Infections (RTI) and Sexually Transmitted Infections (STIs)
- Interaction between RTIs/STIs and HIV/AIDS
- Impact of HIV/AIDS on fertility, mortality and its relationship with migration

VIII. Male Reproductive Health Issues

- Men's reproductive health services
- Men's role in women's health,
- Strategies to reaching out to men.

IX. Adolescent and Menopausal women

- Aspects of adolescent sexual and reproductive behaviours
- Socio-psychological and health problems of menopausal women

X. Gender and Reproductive Health

- Rights based approach to gender equity and reproductive health and HIV/AIDS
- Gender and HIV/AIDS vulnerability and its demographic impact

XI. Reproductive rights and ethical issues

- Human rights and values
- Ethical values in RH services; information, liberty of choice
- Professional and ethical issues

Reading List

Essential Readings :

1. Berer, M., (2000): *Making Abortions Safe: A Matter of Good Public Health Policy and Practice,* Bulletin, WHO, Vol. 78(5), pp. 590-592.
2. Bott, S. et al (Eds. 2003): *Towards Adulthood: Exploring the Sexual and Reproductive Health of Adolescent in South Asia*, World Health Organization, Department of Reproductive Health and Research, Geneva.
3. Pachauri, S. (Eds. 1999): *Implementing a Reproductive Health Agenda in India : The Beginning,* New Delhi ; Population Council.
4. Rutsein, Shea, O. and Shah, Iqbal, H. (2004): *Infecundity, Infertility, and Childlessness in Developing Countries*. DHS Comparative Reports No.9. Calverton, Maryland, USA ORC Macro and the World Health Organization.
5. Srinivasan, K. (Eds. 1996): *Population Policy and Reproductive Health*, New Delhi; PFI and Hindustan Publications.
6. Verma, R., P.J. Pelto, S.L. Schenshul, and A. Joshi (Eds. 2004): *Sexuality in the Times of AIDS: Contemporary Perspectives from Communities in India*, New Delhi; Sage.
7. World Health Organization, (1990): *Measuring Reproductive Morbidity",* Report of a Technical Working Group, Geneva, August 30-September1, 1989, WHO/MCH/90.4.

Suggested Readings :

1. Alan Guttmacher Institute, (2000): "Readings on induced abortion vol.1: Politics and policies- Articles from Family Planning Perspectives 1974-1999", The Alan Guttmacher Institute, New York.

2. Casterline, J.B., (1989): Collecting Data on Pregnancy Loss: A Review of Evidence from the World Fertility Survey, *Studies in Family Planning* Vol. 20(2):81-85.
3. Gittleshon, J.; Bentley, M.E.; Pelto, P.J.; Nag, M.; Pachuri, S.; Harison, A.B., and Landman, L.T (Eds), (1994): *Listening to Women Talk About Their Health: Issues and Evidence from India*, The Ford Foundation, New Delhi.
4. Goliber, T.J., (1997): Population and Reproductive Health, *Population Bulletin* Vol. 52(4), Washington, DC: Population Reference Bureau.
5. Raju, S.and Leonard, A.(eds.) (2004): *Men as Supportive Partners in Reproductive Health,* Population Council, New Delhi
6. Unisa, S., (1999): Childlessness in Andhra Pradesh, India: Treatment-Seeking and Consequences, *Reproductive Health Matters*, Vol. 7, No. 13.
7. Bergman Ylva, (2004): *Breaking Through, A Guide to Sexual and Reproductive Health and Rights,* Norra Skane Offset, Stockholm.
8. Singh, S.K., Lhungdim H., Chattopadhyay, A and Roy, T.K, (2006): *"Women's vulnerability to STI/HIV in India,* I.I.P.S, Mumbai.

MSP-C9 **60 Hours**

POPULATION AND DEVELOPMENT

Learning Objectives: The main objective of this paper is to impart knowledge on development in context of population.

The goal of this course is to make students aware of varying concepts and theories of development, population issues and its linkages with development and environment.

I. Concepts and Measures of Development:

Need to study population in the context of development; economic development – definition and indicators; economic determinants of development, non-economic determinants of development and role of institutional structure.

Concepts of development and measures: limitations of per capita income as an indicator of development; emphasis on equality, Lorenz curve and Gini coefficient; towards human centered development-welfare approach, investment in human capital approach, physical quality of life index (PQLI); human development index (HDI), gender development index (GDI), Concepts and Measures of Poverty, human poverty index (HPI); concept of sustainable development; concepts of social development, social capital and social change.

II. Theories and Strategies of Development:

Theories of development: Arthur Lewis's two-sector model; big push theory, Liebenstein's critical minimum effort theory, Harrod-Domar and Solow's growth models.
Development strategies through the different five year plans.
Millennium development goals and achievements with special reference to India.

III. Linkages of Population on Development

Effect of development on demographic variables:
Demographic transition theory, age structure transition, demographic dividends and population ageing; effects of fertility and mortality declines, health improvements and migration on economic growth.
Divergent views regarding the relationship between population and development:

(i) Pre-modern, Mediaeval and classical writings on population- Early and mediaeval Christian views, Hebrew writers, Muslim authors, and Hindu writings of pro-natalist and prosperity argument; ancient Greece philosophers views, Chinese philosopher Confucius writings on optimum population; Classical Mercantilist and Physiocrats views, Socialist and Marxist views.

Modern theories of population and development: three major viewpoints – pessimist, optimist and neutralist:

(ii) Pessimistic perspective: Population growth viewed as an obstacle to development; Malthus theory, Coale and Hoover study, tragedy of commons, limits to growth study and Enke's investment model.

(iii) Optimistic perspective: Population growth is conducive to development – Mercantilist views, Colin and Condorcet views, views of Colin Clark, Ester Boserup and Julian Simon.

(iv) Neutralist/revisionist perspective: need to study linkages between population change and development- views of Simon Kuznets, Allan Kelly and Robert Schmidt, and Bloom and Williamson.

IV. Population and Resources:

Natural resources: classification of natural resources, renewable and non-renewable resources, resources scarcity and resource depletion.

Capital resources: effect of demographic factors on savings and investments, technology and development; importance of technology to improve the productivity of physical assets.

Human resources - quantitative aspects: concepts labour force, economically active population, unemployment, types of unemployment, disguised, seasonal frictional and chronic. Factors affecting demand and supply of labour, effect of population growth and development on structure of employment.

Human resources – qualitative aspects: factors influencing productivity of human beings need for investment in human capital, implications of population growth on food, sanitation, housing, employment, education and health and social security to improve the quality of human resources.

Educational development, urbanization and exposure to mass media and their social consequences.

V. Population and Environment:

Various forms of environmental degradation and their implications; population growth, development and the greenhouse effect – global warming; pressure of population growth on water resources; pressure of population growth on land use; soil erosion, desertification, deforestation, and soil salinity. Pressure of population growth on energy resources; environmental degradation and it's implications for health; guidelines for environmental protection.

Reading List

Essential Readings :

1. Todaro, Michael P. (1981): *Economic Development in the Third world.* New York: Longman, Chapter 3.
2. Sen, Amartya, (2002): The concept of development in Chenery Hollis and T.N. Srinivasan (eds), *Handbook of Development Economics* Vol. 1. Amsterdam: Elsevier. Chapter 1.
3. Haq, Mahbubul (1996): *Reflections on Human Development,* Delhi: Oxford University Press. Chapters 1 & 2.
4. United Nations Development Programme (2006): *Human Development Report 2006,* New Delhi: Palgrave Macmillan Technical Note 1. pp. 393-99.
5. Ray, Debraj (1998): *Development Economics*. Delhi: Oxford University Press. Chapters 3 & 4.
6. Kapila, Ray and Uma Kapila (2001): *India's Economy in the Twenty First Century.* 2nd Revised Edition. New Delhi: Academic Foundation. Chapters 1 to 5, 15, 16 & 21.
7. Birdsall, Nancy, Kelley, Allen C. and Sinding, Steven W. (2001). *Population Matters: Demographic Change, Economic Growth and Poverty in the Developing World,* Oxford: Oxford University Press Chapters 2, 4 and 5.
8. Jamison D. et al. (eds) (2006): *Disease Control Priorities in Developing Countries,* New York: Oxford University Press and World Bank. Chapter 1.
9. David E Bloom, David Canning, JaypeeSevilla, (2003): *The Demographic Dividend.* Sanata Monica, CA: Rand Corporation. Chapter 2.
10. National Research Council (1986): *Population Growth and Economic Development: Policy Questions.* Washington D.C.: National Academy Press. Chapters 1, 2, 3, 4, 6 & 8.

11. United Nations (1973): *The Determinants and Consequences of Population Trends,* Volume 1, Chapters 11 & 13.
12. Chenery Hollis and T.N. Srinivasan (eds), (2002): *Handbook of Development Economics,* Vol 1, Amsterdam: Elsevier. Chapters 10, 11, 13 & 15.
13. Kawadia, G. and K. Ahuja, (2006): *Environmental Issues of Development.* Sections A and E, Ambala: Associated Publishers. Chapters 1, 3 & 13.

Suggested Readings :

1. Ray, Debraj (1998): *Development Economics.* Delhi: Oxford University Press. Chapters 1 & 2.
2. United Nations Development Programme (1 UNDP, *Human Development Report 1990* Delhi: Oxford University Press. Chapter 1.
3. Lewis W.A, (1958): Economic development with unlimited supplies of labour. In A. N. Agarwala and P. Singh (eds.) *The Economics of Underdevelopment.* New York: Oxford University Press.
4. Leibenstein, H. (1963): *Economic Backwardness and Economic Growth.* New York: John Wiley Chapter 8.
5. Solow, R.M. (1956): A contribution to the theory of economic growth, *Quarterly Journal of Economics,* 70:65-94.
6. Coale A.J. and Hoover, E.M. (1958): *Population Growth and Economic Development in Low Income countries,* Princeton N. J.: Princeton University Press.
7. Simon Julian. (1981): *The Ultimate Resource,* Princeton N.J.: Princeton University Press.
8. United Nations (1973): *The Determinants and Consequences of Population Trends,* Volume 1, Chapters 3 & 7.
9. Martin Philips L, (2004): *Migration and Development: Towards Sustainable Solutions,* Geneva: ILO.
10. Chary, S.N and Vinod Vyasulu (eds). (2000):*Environmental Management – An Indian Perspective,* New Delhi: Macmillan India.
11. United Nations. 2003. *Indicators for Monitoring the Millennium Development Goals: Definition, Rationale, Concepts and Sources.* New York: United Nations.

MSP-C10 **60 Hours**

RESEARCH METHODOLOGY

Learning objective: The main objective of this course is to impart knowledge and skills on the principals and methods of social science research. The goal of this course is to equip students with the skill to prepare a scientific research proposal and conduct social science research.

I. Scientific Methods of Research

- Definition of Scientific Research: Assumptions, Operations and Aims of Scientific Research.
- Research Processes: Conceptual, Empirical and Analytical.
- Phases of Research: Essential Criteria of Scientific Research Method.

II. Research Design

Observational Studies: Descriptive, explanatory, and exploratory, monitoring and evaluative studies.

Experimental Studies: Pre experimental design, True experimental Design, Pre-test & post-test designs, Follow-up or longitudinal design, Panel Studies.

Threat to internal validity: Reliability and Internal-External validity.

Action research studies.

III. Measurement

Reliability and validity of measurement: Face, content, construct, convergent, concurrent, and predictive validity; Inter-coder reliability, stability, non random and random errors, scaling and composite indices.

Attitudinal Scales: Point scales, ranking scales, rating scales, limitations of attitudinal scales,

Types of Scales: Nominal and Ordinal Scale, Guttmann, Likert, Semantic and Thurstone scales.

IV. Methods of Data Collection

Quantitative Methods: Checklist schedules, questionnaire (mail method, interviews through telephone, internet and computers), interview schedule

(face-to-face interviews or personal interviews), Cross cultural variability and vignettes.

Questionnaire/interview schedule design and construction: Principles of constructing a questionnaire/ interview schedule, Types of questions, framing of questions (simple, delicate, personal matter), sequencing of sections and questions and Interview techniques.

Qualitative Method: Walk through and observation (participatory and non-participatory), Social mapping, key informant interview, In-depth interviews, Focus group discussion, content analysis, free listing, pile sorting, projective techniques, mechanical devices (camera, tape recorder), mystery client technique.

V. Sampling

Complete enumeration versus sampling.

Concept of sampling unit, sampling frame and sampling design.

Sampling methods: Simple random sampling, stratified sampling, systematic sampling, cluster sampling, and purposive sampling.

Multistage sampling in large-scale surveys, self-weighting designs, Stratification in multistage sampling.

Sampling and non-sampling errors, calculation of weights, sample size determination.

VI. Data Collection, processing and analysis

Research ethics; At the level of respondent, community, organization and presentation of results

Fieldwork – interaction with community and respondent.

Editing, coding, data entry, validation, processing & analysis.

VII. Writing research proposal and report

Purpose of a proposal/report

Content of proposal/report: Introduction, Review of Literature, Objectives and conceptual framework, Sources of data, Methods of data collection and analysis, Summary, conclusions and recommendations.

Footnotes, References/Bibliography, Appendices and Glossary

VIII. Research Methodology: Lab-exercise and field work

Application of Atlas Ti and ANTHROPAC in analyzing qualitative data, Group Work- Field practices encompassing application of Research Methods

Reading List

Essential Readings :

1. Bernard, H. Russell, (1995): *Research Methods in Anthropology: Qualitative and Quantitative Approaches,* Altamira Press, Walnut Creek.
2. Goode W J and Hatt P K. 1952. Methods in Social Research. McGraw Hills, New York.
3. Kish, Leslie, (1995): *Survey Sampling*, John Wiley and Sons, Inc. New York.
4. Lohr L. Sharaon., (1999): *Sampling: Design and Analysis*, Duxbury Press, London.
5. Lwanga S. K. and Lemeshow S., (1991): *Sample Size determination in Health Studies: A Practical Manual,* World Health Organization, Geneva.
6. Mukherji, P.N., (1999): *Methodologies in Social Science*, Sage Publications, New Delhi.
7. Pullum W. 2006. An Assessment of Age and Data Reporting in the DHS Surveys, 1985-2003. DHS Methodological Report No. 5. Calverton, Maryland, Marco International Inc.
8. Royce A. Singleton and Bruce C. Straits, (1999): *Approaches to Social Research,* Oxford, Oxford University Press.
9. Young P V. 1994. Scientific Social Surveys and Research. Prentice-Hall, New York (4th Edition).

MSP-E4.1 **45 Hours**

CONCEPTS AND MEASURES OF GLOBAL HEALTH

Learning Objectives: This paper introduces to the students the basic concepts of global health. This course emphasizes on understanding the global burden of disease and measuring population health. A key component of this course is to understand the determinants of health and health disparities. It will also provide student with a broad understanding of the relationship between environment and health. It also develops the understanding of the students about the health care delivery system, human resources for health, migration of human resources for health, etc. Finally, it introduces to students the issues related to policy and health. The topics that will be covered in the course are listed below:

I. **Concept and introduction**: Concept of global health; why is it important to study global health?; health and development in the global context; demographic, health and epidemiological transitions; major patterns of distribution of disease in the world; sources of data on disease and disability

II. **Global burden of disease**: Concept of burden of disease; hypotheses related to burden of diseases – compression of morbidity, expansion of morbidity and dynamic equilibrium; measures of burden of disease at the population level – health expectancy and health gap; methods for estimating DFLE, HALE and DALY; how does the burden of disease and mortality vary by geography, social class, race and gender? GBD 1990, 2010 and 2013 – changes and continuities; new and re-emerging infectious diseases; issues related to HIV/AIDS; introduction to NCDs; double burden of diseases in developing countries; impact of tobacco abuse; trends and challenges related to maternal and child health; maternal mortality

III. **Determinants of Health**: Culture, gender, race, social, political and economic determinants of health and health disparities; contribution of income, education and other factors to health; Factors responsible for variation in the global burden of disease across countries; poverty and health; income inequality and health; health risk factors

IV. **Environment and health**: Role of water, sanitation, indoor and outdoor air pollution and nutrition in explaining global health disparities; climate change and health; migration, disaster (man-made, natural), conflicts and epidemics

V. **Health care delivery systems**: Introduction to health systems; how to measure performance of health system?; health systems in different countries; factor responsible for better performance of health systems in developed countries; the distribution of human resources for health; quality of human resources for health; the push and pull factors associated with the migration of health care providers

VI. **Policy and health**: Human rights approach to health; national and international policies related to health; how are global health priorities set?; the role of international actors like WHO, World Bank, etc. in global health; influence of international priorities on national priorities

Reading List

Essential readings :

1. Skolnik, R. (2008). Essentials of global health, Jones and Bartlett: Sudbury, MA.
2. Jacobsen, K.H. (2007). Introduction to global health, Jones and Bartlett: Sudbury, MA.
3. Markel, W.H., Fisher M., Smego R. (2007). Understanding global health, McGraw Hill: Columbus.
4. Merson, M.H., Black, R.E., Mills, A.J. (2001). International public health: diseases, programs, systems and policies, Gaithersburg, MD: Aspen Publishers.
5. Murray, C.J.L., Saloman, J.A., Mathers, C.D., Lopez, A.D. (2002). Summary measures of population health: concepts, ethics, measurement and applications, The World Health Organization: Geneva.
6. Murray, C.J.L., Saloman, J.A., Mathers, C. (2000). A critical examination of summary measures of population health, Bulletin of the World Health Organization 78(8): 981-994.
7. Cutler, D., Deaton, A., Lleras-Muney, A. (2006). The determinants of mortality, Journal of Economic Perspectives 20(3): 97-120.
8. Link, B.G., Phelan, J. (1995). Social conditions as fundamental cause of disease, Journal of Health and Social Behavior 35: 80-94.
9. Smith, J.P. (1999). Healthy bodies and thick wallets: the dual relation between health and economic status, Journal of Economic Perspectives 13(2): 145-166.
10. Shiffman, J. (2009). A social explanation for the rise and fall of global health issues, Bulletin of the World Health Organization 87(8): 608-613.

11. Gwatkin, D.R. (2000). Health inequalities and the health of the poor: what do we know? What can we do? Bulletin of the World Health Organization 78(1): 3-18.
12. Laxminarayanan, R. et al. (2006). Advancement of global health: key messages from the Disease Control Priorities Project, Lancet 367(9517): 1193-1208.
13. Murray, C.J.L., Frenk, J. (2000). A framework for assessing the performance of health systems, Bulletin of the World Health Organization 78(6): 717-731.
14. Mills, A., Rasheed, F., Tollman, S. (2006). Strengthening health systems, In Disease Control Priorities in Developing Countries (2nd Edition), pages 87-102, New York: Oxford University Press.
15. Hsiao, W.C. (2003). What is a health system? Why should we care? Harvard School of Public Health Working Paper.
16. Anand, S., Baernighausen, T. (2004). Human resources and health outcomes: a cross country econometric study, Lancet 364(9445): 1603-09.
17. Chen, L. et al. (2004). Human resources for health: overcoming the crisis, Lancet 364(9449): 1984-1990.
18. Pallikadavath, S., Singh, A., Ogollah, R., Dean, T., Stones, W. (2013). Human resource inequalities at the base of India's public health care system, Health & Place 23: 26-32.
19. Zurn, P., Dal Poz, M.R., Stilwell, B., Adams, O. (2004). Imbalance in the health workforce, Human Resources for health 2(13): 1-12.
20. Willis-Stattuck, M. et al. (2008). Motivation and retention of health workers in developing countries: a systematic review, BMC Health Services Research 8: 1-8.
21. Brown, T.M., Cueto, M., Fee, E. (2006). The World Health Organization and the transition from 'international' to 'global' public health, American Journal of Public Health 96(1): 62-72.
22. Ruger, J.P. (2005). The changing role of the World Bank in global health, American Journal of Public Health 95(1): 60-70.
23. Ravishankar, N. et al. (2009). Financing of global health: tracking development assistance for health from 1990-2007, Lancet 373(9681): 2113-2124.
24. London, L. (2008). What is a human-rights based approach to health and does it matter? Health Human Rights 10(1): 65-80.

MSP-E4.2 **45 Hours**

GENDER, HEALTH AND DEVELOPMENT

Learning Objectives: The rationale of the course is to synthesize the issues studied in different papers and equipping the students with a number of gender sensitive indicators and analytical tools.

I. Introduction

The purpose of this section is to explain the basic concepts of three major components of this course namely gender, health and development.

1. The Concept of gender, Evolution of gender in historical perspective
2. Patriarchy, Kinship Structure and gender roles, Feminist theories, Gender stratification in traditional and modern societies, Gender Analysis Tools, Gender Sensitive Indicators and Gender budgeting and auditing
3. Concept of health, Evolution of the concept of Reproductive Health, life cycle approach to RH and recommendations from ICPD
4. Changing concept of development, Indicators of development, gender adjusted HDI

II. Gender and Health

This section presents the situation analysis regarding sex differentials in different aspects of health and highlights some special issues of women and men's health.

Situation analysis of sex differentials in morbidity and mortality

1. Major morbidity and mortality burden in the developing world with major focus on India- sex ratio of births, major health problems experienced by women and men, reproductive health of women and men in developing world, differentials in use of male and female methods of contraception
2. Health infra-structure and health care providers
3. Nutritional status, susceptibility to infections
4. Accidents and other risk factor and health seeking behavior
5. Health and Nutrition issues of adolescent of boys and girls , abuse and maltreatment, Puberty, Sexual Debut, Adolescent Pregnancy, Abortion, women and family planning programs, Contraceptive Technology

6. Major risk factors of men's health: masculinity, alcoholism, tobacco and drug consumption, accident
7. Gender and Sexuality: Sexual health of men and women, gender dimension of HIV /AIDS. Gender and Infertility

III. Gender and Development

The purpose of this section is to understand the sex differentials in health in terms of socio- economic and cultural context of gender and to study the gender dimensions of development.

1. Understanding social structures- role of caste, class, ethnicity and religion and gender in health inequalities and health outcomes
2. Gender dimension of social development, status and role of men and women in household and community, culture, marriage customs, dowry and bride price practices, age at marriage
3. Gender differentials in household headship and role in decision making
4. Gender differences in access to knowledge-, education, exposure to media and freedom of movements
5. Gender based violence- Domestic and community violence and gender, Legal aspects of domestic violence and rape
6. Women's role in community life and involvement in politics-as voter, political worker and leader, women in Panchayati Raj Institutions and self help groups
7. Media representation of men and women
8. Gender dimension of economic development: women's access to economic resources, entitlements, land ownership, inheritance laws, access to credit, measurements of women's work, profiling women's work, informal sector involvement, working condition, maternity benefits, wage differentials, gender and poverty
9. Globalization, changing pattern of economic activity, issues of marginalization and vulnerability along with agency, negotiation and spaces of power, Gender Divisions in Urban Labor Markets, Gender and Migration
10. Housing, Household environment and its differential impact on men and women's life
11. Environmental degradation, changes in climate, water table and land use and their differential impact on men and women

IV. Gender mainstreaming in health and development programs

The purpose of this section is to understand the concept of mainstreaming gender in development and to review the measures taken for eliminating undesirable impact of gender inequalities and to bring women in the main stream of development

1. The concept of Gender Mainstreaming
2. Historic overview of Gender Mainstreaming- Women in development (WID)-concept and criticism by feminist; shift to Gender and Development (GAD), Gender Mainstreaming and the Millennium Development Goals (MDGs)
3. The rights approach to Health, sexual and reproductive rights, violence, human rights and health
4. Paradigm shift from the Target Based Supply Driven Fertility influencing programs to RH Approach.
5. Legal aspects – laws regarding marriage, dowry, domestic violence, ,rape PNDT act , property inheritance, maternity and other benefits of working women, sexual harassments at workplace, reservations in political institutions and
6. Gender mainstreaming in various health and development sectors- e.g. Agriculture, Health, Education, gender in work place (Public & private) etc.
7. Advocating for Gender equality
8. Gender responsive policy making and planning of health and development programs.

Section 5: Some case studies of Gender analysis of health and development programs, budgeting and auditing

This section aims to give necessary skills and tools to undertake the gender analysis of health and development policies and programs and to help them to develop gender sensitive indicators and measures

Reading List

Essential Readings :

1. Basu, Alaka M., (1992): *Culture*, *The Status of Women and Demographic Behaviour*, Oxford University, New York.
2. Bhasin K. 1993. *What is patriarchy?,* Kali for Women Publishers, New Delhi.
3. Bhasin K. (2000). *Understanding Gender*, Kali for Women Publishers, New Delhi.
4. Dyson, Tim and Mick Moore, (1983). "On Kinship structure, female autonomy,

and demographic behaviour in India", *Population and Development Review* vol. 9(1), pp. 35-60.
5. Ellsberg Mary and Heise Lori L. (2005) *Researching violence against women: A practical guide for researchers and activists*. WHO and Path, Washington D.C.
6. Folbre, Nancy. (1992). Improper arts: Sex in classical political economy. *Population and Development Review*. 18(1): 105-112.
7. Gita Sen, Adreinne Germain and Lincoln C. Chen, (Eds.), (1994): *Population Policies Reconsidered: Health and Empowerment and Rights*, Harvard University Press, Harvard.
8. Jeffery Patricia and R. Jeffery. 1997. *Population Gender and Politics: Demographic change in rural north India.* Cambridge University, Cambridge.
9. Miller, Barbara, D.(ed) (1993) *Sex and Gender Hierarchies*, Cambridge University Press, New York.
10. Hess, B.B. and M.M. Ferree. (1987). *Analyzing Gender: A Handbook of Social Science Research*. Sage Publication, London.
11. United Nation. 2001. *Population, Gender and Development: A Concise Report*. UN, Economic and Social Affairs (Dept. of), New York
12. World Health Organization. (1998). *Gender and Health. Technical paper* WHO/ FRH/WHD/98. (Website: www.who.int)
13. World Bank. (1991). *Gender and Poverty in India*. World Bank, Washington.
14. World Health Organization *(2003): Comparative Evaluation of Indicators for Gender Equity and Health*, Women and Health Programme, Centre for Health Development, Kobe, Japan.
15. William Joan. 1989. Deconstructing Gender, 87 Michigan L Rev. 797. *Law Journal Article*

Suggested Readings :

1. Agnes, Flavia. (2000). Law and gender inequalities: the policies of women's right in India. Oxford, New Delhi.
2. Anker, R.(1997). *Gender and Jobs: Sex Segregation of Occupations in the World*, ILO, Geneva.
3. Balk, Deborah, 1997): "*Defying Gender Norms* in Rural Bangladesh: A Socio demographic Analysis". *Population Studies* Vol.51, pp. 153-172.
4. Bandhopadhyay, D. 2000. Gender and governance in India. *Economic and*

Political Weekly. 35(3): 2696-269xxx).
5. Basu, Alaka Malwade. 2000. Gender in population research: Confusing implications for health policy. *Population Studies*. 54: 19-22.
6. Das Gupta, Monica, 1987. Selective discrimination against female children in rural Punjab, India. *Population and Development Review*, 13(1): 77-100.
7. Doyal L.(1995) What Makes Women Sick: Gender and the Political Economy of Health. London, Macmillan.
8. Dreze, Jean and Sen Amartya, (1995): *India: Economic and Social Opportunity*, Oxford University Press, New York.
9. Harriet B. Presser, (1997): Demography, Feminism and the Science-policy Nexus, *Population and Development Review* Vol. 23(2), pp. 295-331.
10. Jeffery, Roger and Basu, Alka M. (Eds.), (1996): *Girls Schooling, Women's Autonomy and Fertility Changes in South Asia*, Sage Publications, New Delhi.
11. Jejeebhoy S. 1996. *Women's Education, Autonomy and Reproductive Behavior: Assessing what we have learned*. East West Centre, Hawaii.
12. Reeves Hazel and Baden Sally (2000): *Gender and Development: Concepts and Definitions*, Report No. 55, Bridge (development- gender) Institute of Development Studies, University of Sussex, Brighton BN1 9RE, UK.
13. Sonya, Andermahr, Lovell Terry and Wolkowitz, Carol, (1997): *A Glossary of Feminist Theory*, Arnold-Hodder Headline Group, London.
14. Sopher, David, (1980). *An Exploration of India: Geographical Perspective on Society and Culture,* Cornell University New York

MSP-E5.1 **45 Hours**

ADVANCED STATISTICAL PACKAGES AND APPLICATION IN LARGE SCALE DATA

Learning objectives:

1. To comprehend the need for big data in monitoring and evaluation of health and population policies
2. To introduce national and international big data and guide students in managing these data
3. To familiarize students to survey softwares

Unit I: Scope of large scale surveys and big data

Concept of big data, need for big data for planning and monitoring of public health programmes, introduction to large scale demographic and health surveys (DHS): NFHS, DLHS, WHO-SAGE, LASI-objectives, designs, instruments, sample size. Cleaning of big data- range and consistency checks, missing data, long and wide format conversion, merging files. Hands on exercise, Ethical considerations in large-scale sample surveys

Unit II: Software and Quality assurance procedures

Introduction to STATA for survey data analysis-SVYSET, SVYTAB, SVYMEAN, SVYPROP, SVYTOTAL, SVYLC. Summarization of big DHS data, Conversion of ASCII and SPSS data into STATA format. Hands on exercise. Revisit of sub-samples, field check tables, non-response pattern, and quality lot assurance, roles of supervisors, editors, field and nodal agencies. Third party audit.

Introduction to R: reading ASCII file, data summarization: frequency and graphical representation, survey data summarization using R. Installation of libraries: sampling, survey, samplingbook, pps. Use of svydesign, svytotal, svymean.

Unit III: Use of STATA and R for sampling and estimates

Sampling and estimation by simple random sampling, stratified, cluster, systematic and multi-stage sampling, PPS sampling using STATA and R.

Reading List

Suggested readings:

1. Lumley, T. Complex Surveys: A Guide to Analysis Using R
2. Damico, A. Step-by-step instructions to analyze major public-use survey data sets with the R language
3. Ladusingh, L. Survey Sampling Methods
4. Fares Qeadan. Sampling Methods Using STATA

MSP-E5.2 **45 Hours**

POPULATION, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Learning objectives:

This paper attempts to address the theoretical and empirical advancements and the strategies and concerns regarding population-environment-development linkages. After the successful completion of this paper, students will be able to:

1) Define the concept of sustainable development and explain how the idea of sustainability and development has changed over time.
2) Understand how the policies have evolved in line with the concept of sustainable development and population trends.
3) Critically examine the recent trends in sustainable development with specific focus on population changes.
4) Apply sustainable development concepts and policies to current population, environmental and developmental issues.

Modules

I. Sustainable development: Conceptual and Theoretical issues

Importance of Studying Sustainable development; Meaning, Concepts and Definitions; Inter-linkages between ecology and development; Economic growth and ecological degradation; Indicators and processes involved in its achievement; Brundtland Report on Environment and development and agenda.

II. Innovations for Sustainable Development

Conventional perspectives on development; Critics of Conventional Development perspectives; Case studies based on experiences from developed and developing countries; How the concept of sustainability has influenced the policy, programme practice in development sectors

III. Population-environment linkages

Ecological and environmental dimensions of sustainable development; Approaches to environment; Gandhian approach, Marxian/Socialist

approach, Neo-classical approach, Market approach; Population growth and climate change; Population matters to sustainable development and environment (growth, age structure, spatial distribution)

IV. Population and Quality of Life

Quality of life: definition and measurement; Resource creation, management and distribution of water, air, housing, etc; Land, Cattle and open Space linkages; Sanitation, Health and health care; Education and Information.

V. Environmental Degradation and Poverty

Sustainable livelihoods; Population and common property resources; Population, poverty and vulnerability; gender dimensions; Grass-root perspectives – Environment-Development struggle; Development and displacement; Alienation of tribal; Tribal land encroachment; Forest Depletion; Case studies – Narmada and Vedanta (Orissa) Projects.

VI. Environmental issues in the context of migration and displacement

Regional Development; Green Movements; Chipko movement; Silent valley movements etc; Natural Calamities – Flood, Droughts, Landslide, Earth Quakes, Tsunami etc; Urbanization-new challenges- environmental health hazards (water or air pollution); Solid Waste Management; Rain Harvesting; Mobility and Patterns of settlement; Development and urban ecology; Slums, Urban Poverty and Rehabilitation.

VII. Governance for Sustainable Development

Issues related to natural resources management; Forest management; Mining of natural resources, Ground Water, River and Ocean Pollution; Different institutional arrangements for environmental protection and their limitations; Creating and managing emission related norms; Some success models of efficient environmental management – CNG, Smokeless Choolah, and other successful green models; The Challenges for International Environmental Governance; Emerging new institutions of environmental protection; Capacity Building, Technology Transfer for Sustainable Development.

VIII. Population, Society and Sustainable development

Population and resources; Human versus land 'carrying capacity'; 'Population stabilization' to 'Population balance'; Critiques of sustainable development

perspectives; Role of social institutions; Individual behavior in the context of social costs and benefits; Gender and environment; Indigenous population and traditional methods of environmental sustainability; Sociological approaches to sustainable development; Vulnerability of Indigenous population; Case Studies – Sacred forests, Anti-Eucalyptus movement

IX. Contemporary issues

Affluence and environment: How rich countries are also responsible for the sad state of affairs?; NGOs and Development issues; Civil society initiatives and involvement; International Agencies; Population and Biodiversity; Research Methods to examine Population, sustainab development and environment nexus.

Reading List

Suggested Readings :

1. Bongaarts, John. (1992). Population growth and global warming. *Population and Development Review, 18: 299-319.*
2. Bründtland , G.H. (1987). *Our Common Future: The World Commission on Environment and Development*, Oxford, Oxford University Press.
3. Clarke, John I. (1996): "The Impact of Population Change on Environment: An Overview." in Bernardo Colombo, Paul Demeny, and Max F. Perutz, (Eds.), *Resources and Population: Natural, Institutional, and Demographic Dimensions of Development.* Clarendon Press, Oxford, pp. 254-268.
4. Davis , Kingsley and Mikhail S. Bernstam (eds.) (1991), *Resources, Environment, and Population: Present Knowledge, Future Options*. New York: Oxford University Press.
5. Dawson, P. J, and R. Piffin, (1998), Is there a long run relationship between Population growth and living standards? The case of India, *Journal of Development Studies,* 34. 149-156.
6. Demeny, Paul. (1989). Demography and the limits to growth. In Michael S. Teitelbaum and Jay M. Winter (eds), *Population and Resources in Western Intellectual Traditions*. Supplement to *Population Development Review*. New York: Population Council.
7. Diana Liverman, Emilio F. Moran, Ronald R. Rindfuss, and Paul C. Stern, (Eds). (1998): *People and Pixels: Linking Remote Sensing and Social Science.* Committee on the Human Dimensions of Global Change, Commission on

Behavioral and Social Sciences and Education, National Research Council, National Academy Press:Washington DC.

8. Dietz, Thomas and Eugene A. Rosa.(1997): "Effects of population and affluence on CO2 emissions." *Proceedings of the National Academy of Sciences.* Vol. 94l pp. 175-179.
9. Government of India (1999): *Silent Revolution for Environmental Conservation*, Ministry of Environment and Forests, New Delhi.
10. Guha, Ramachandra and Martinez-Alier,J (1998): *Varieties of Environmentalism,* Oxford University Press, New Delhi.
11. Hardin, Garrett.(1968): "The Tragedy of the Commons." *Science*. Vol. 162, No. 13, reprinted in Rex R. Campbell and Jerry L. Wade, (Eds), *Society and Environment: The Coming Collision.* Allyn and Bacon, Inc: Boston, MA, pp. 1243-1248.
12. Harris, J.M. (2004) *Basic Principles for Sustainable Devel*opment, Global Development and Environment Institute, working paper 00-04. (Available at http:// ase.tufts.edu/gdae/publications/Working_Papers/ Sustainable% 20 Development.PDF).
13. Holdren, J. P., and P. R. Ehrlich.(1974). Human population and the global environment. *Am. Sci.* 62: 282-292.
14. Kem, R., Parto, S. and Gibson, R.B.(2005). Governance for Sustainable Development: Moving from theory to practice, *The International Journal of Sustainable Development*, 8(1/2), 12-30.
15. Keyfitz, N. (1991). Population and development within the ecosphere: one view of the literature. *Population Index, 57*: 5-22.
16. Lafferty.W. (ed.) (2004). *Governance for Sustainable Development. The Challenge of Adapting form of Functions*, Cheltenham: Edward Elgar, (chapter 1 and 11).
17. Lutz, Wolfgang, A.Prskawetz and W.C.Sanderson (eds.) (2002). *Population and Environment: Methods of Analysis.* Supplement to Population and Development Review. New York, Population Council.
18. McNicoll, Goefferey.(2005). *Population and Sustainability*. Working paper No.205. New York, Population Council.
19. Pebley, Anne R. (1998): "Demography and the Environment." *Demography*. Vol. 35, No. 4; pp. 377-389.

20. Pimental, David, et al. (1999). Will limits of the Earth's resources control human numbers? *Environment, Development and Sustainability* 1: 19-39.
21. Preston, Samuel H. (1994). *Population and Environment: From Rio to Cairo*. Liège: International Union for the Scientific Study of Population (IUSSP).
22. Simon, Julian L. (1996). *Population Matters: People, Resources, Environment, and Immigration*. Transaction Publishers: New Brunswick, NJ.
23. UNFPA (2009): *State of World Population- 2009: Facing a changing world: Women, Population and Climate,* UNFPA, New York.
24. Zelezny, Lynnette C., Poh-Pheng Chua, and Christina Aldrich (2000): "Elaborating on Gender Differences in Environmentalism." *Journal of Social Issues.* Vol. 56, N. 3; pp. 443-457.

SEMESTER -VI

MSP-C11 **60 Hours**

POPULATION POLICIES, PROGRAMME AND EVALUATION OF HFW PROGRAMME

Learning objectives:
The objective of this course is to learn how the Government interventions in the form of policies and programmes can affect population trends. The course discusses history of population policies, and different policies across the world. After this, the course focuses on the evolution of India's population policies and programmes. It also covers other policies aimed at specific groups like youth, aged and women.

The course also covers India's population and health programmes, and the methods of the programme management.

After introducing to family welfare programmes, this course introduces to the evaluation of these programmes, with more focus on the evaluation of fertility impact of family planning programmes.

At the end of this course students are expected to have overview of India's population policy and programmes. They are in a position to undertake evaluation studies under the supervision of senior programme personnel. They are expected to able to chalk out framework for evaluation of any programme in the field of health or population and implement it with the support from senior personnel.

I. POPULATION POLICIES AND PROGRAMMES

Definition of Population Policy; principal features of a population policy; policies in the context of population growth, structure and distribution. Policy formulation: Policy indicators, justification of population policy, socio-cultural, political and ethical issues related to population policy and the mechanism of how government decisions influence family decisions.

Role of the United Nations, and other International agencies; U.N. World Population Conferences: Bucharest (1974) and Mexico (1984), and Cairo (1994) the World Population Plan of Action in different countries.

Fertility influencing policies: pro-natalist policies, fertility control policies- direct and indirect. Policies and programmes for special groups: women and children, youth and aged.

Health influencing policies: historical perspective for policies and programmes in developing and developed countries. The Alma Ata Declaration and Health for all by 2000 A.D.

National health and family planning programmes: CNA, RCH, National Population Policy 2000, National Health Policy 2002, and National Rural Health Mission 2005.

II. POPULATION AND PROGRAMME MANAGEMENT

Reproductive Health Programme Management Strategies; Strategic management approach, Targeting the people in need; Marketing approach, client segmentation; community needs assessment; unmet need approach, and health seeking behavior. Providing services; commercial distribution, community based distribution (CBD) systems and social marketing.

Programme design: Management Information System (MIS), structural interventions, management training, organization development (OD).

Quality of Care in Reproductive Health Programme: A Management Perspective: Definition and importance of quality of care. Framework of quality of care in family planning.

III. EVALUATION OF FAMILY WELFARE PROGRAMME

What is evaluation of the programme, objectives of the evaluation. Types of evaluations. Frame-work for the evaluation of the programmes.

Types and levels of indicators in FW programme evaluation. Discussion on Methodological Issues in different evaluation studies in India. Data requirements for the evaluation of programmes. Role of service statistics and surveys as sources of data.

Family Welfare service statistics.
Management Information System (MIS) with special emphasis on Indian FW programme, Role of MIS in evaluation of the programmes.
Operation Research Technique (ORT) in evaluation.

Economic evaluation of the programmes, Cost- effectiveness studies.

SWOT Analysis.

Natural fertility, Potential fertility, Contraceptive Prevalence Rate, Use effectiveness of family planning methods, Unmet need for family planning, Wanted and unwanted fertility, Bongaarts' implementation index.

Fertility impact of Family planning programme. Bongaarts' model for estimating fertility impact.

Reading List

Suggested Reading :

1. Chrissie, P. and Selwyn S. T. Leger, (1993): *Assessing Health Need Using Life Cycle Framework*, Open University, Buckingham.
2. Peabody, J.W.; Rahman, H. Omar; Gertlor, Paull, J.; Haan, Joyce, (1999): *Policy and Health Implication for Development in Asia*, Cambridge University Press. Cambridge.
3. Peters, David H. Yazbeek Abdo S.; Sharma, Rashmi R.; Ramana G.N.V., (2002): *Better Health Care Systems in India*, World Bank, Washington D.C.
4. Stephen, Chee, William, J. House and Laurie Lewis, (1999): "Population Policies and Programmes", in Post- ICPD Era: "Can the Pacific Island Countries Meet the Challenges" *Asia Pacific Journal*; United Nations, New York.
5. UNESCAP, (1988): *Asia Pacific Population Policies and Programmes; Future Directions*, New York.
6. United Nations, (1974): "World Population Plan of Action", *Studies in Family Planning*, 5(12).
7. United Nations, (1998): *National Population Policies,* Department of Economics and Social Affairs, New York.
8. World Health Organization, (1978): "Primary Health Care", International Conference on Primary Health Care, Alma Ata, USSR, 6-12, September.

MSP-C12 **60 Hours**

POPULATION AGING AND HEALTH TRANSITION

Learning objectives:

1) To impart knowledge of concepts and theoretical framework relating to demography of ageing, and health, social and economic dynamics of population ageing
2) To impart concepts and theories of health transition, linkage between health transition and ageing transitions
3) To develop skills to analyze trends, determinants and consequences of population ageing
4) To build capacity to understand and use theoretical and empirical advancements to develop strategies, policies and programmes to meet challenges of population ageing and plan for health care and social and economic wellbeing of ageing population.

I. Demography of Ageing:

a. Concepts and measures of population ageing; components of population ageing; Inter-relationship between population ageing, fertility, mortality and migration; population ageing and momentum of population growth, age structure transition and ageing, and declining population.
b. Population ageing trends and patterns in developed and developing countries; Factors determining ageing trends and patters; Projected trends and pattern of population ageing; global and regional perspective.
c. Population ageing trends, patterns and determinants in India; state variations; future scenario of population ageing in India and states.

II. Life Course Perspective and Social Dynamics of Ageing:

a. Life course perspective of population ageing; Age and Ageing, Ageism; Social Status and Roles of Elderly, Family Structure, Intergenerational relations, Kinship and family support, Social Security; Social network-Frameworks (Berkman and others) and measurement.
b. Living Arrangements of Elderly, Old Age Homes, Social Networks, and

Contribution of elderly: "Feminization" of Ageing, Dependency, Gender Dimensions and Discrimination, Widows, Elderly abuse, Social and legal Vulnerability, Legislations to protect elderly in India.

III. Health Transition:

Understanding Health Transition and Ageing Transition; Critiques of "Health Transition" and "Epidemiological Transition" theory: Mortality and Morbidity Compression, Age Patterns of Mortality and Morbidity; Global burden of disease, communicable diseases, injuries and violence; Health Transition and emergent infectious diseases; social epidemiology and medical social determinants of health as fundamental causes of chronic disease; social determinants of health; the relative income hypothesis and the social gradients of health for ageing population: Healthy Ageing; WHO Framework for Healthy Ageing.

IV. Ageing and Health:

a. Ageing and Life Expectancy: ageing and life expectancy; changing age pattern of mortality, oldest old mortality; ageing and epidemiological transition in disease prevalence and patterns; Measuring population health; life expectancy and

b. Ageing and Burden of Disease: Measurement issues in assessing burden of chronic and multiple diseases in ageing populations; Self-Reported Prevalence, Symptom based prevalence; Measured Prevalence; burden of non-communicable diseases, dual burden of communicable and non-communicable in developed and developing countries; injuries and violence Indian scenario; Ageing, Intrinsic Capacity and Biomarkers of Ageing.

c. Ageing and Functional Health: Ageing and disabilities; trends and prevalence; ageing and injuries, ageing and functional health on various domains- mobility, self-care, pain, vision, interpersonal activities, sleep and energy; Ageing and Quality of Life, WHOQol Ageing and Disability; WHODAS; Ageing and wellbeing and Life satisfaction.

d. Ageing and mental health problems; cognition, memory loss, dementia and depression; Alzheimer's and Parkinson.

e. Ageing and health risk factors: nutrition, diet and food practices; health risk behaviour- tobacco, alcohol; physical activities; Access to minimum living conditions (sanitation, water).

V. Health Care System for Geriatric Care and Health Financing:

a. Availability and accessibility to geriatric care, Geriatric Health Care Institutions; Human Resource Development for Geriatric Care; institutional care; Long-term Care; Health Systems Inequalities for Addressing NCDs.

b. Ageing, health care and health financing: health care utilization, public and private health services utilization; outpatient and inpatient health care utilization; sources of health spending; out of pocket health expenditure; lack of health care options for elderly; Health induced impoverishment among elderly.

VI. Population Ageing and Economic Conditions:

a. Population Ageing and Labour Force: Implications of population ageing on labor force, Retirement and work participation among elderly; occupational distribution among the elderly.

b. Ageing and Public Finance: Ageing, savings and investment; pressures on public finance - government health expenditure; implications for health insurance and health financing for elderly, Implications for Government expenditure for social security – pension, social support and housing; The Solow model with an ageing population, Becker's family model; Bloom and Williamson's model; ageing and poverty; Ageing, health and development.

VII. Ageing Policies and Programmes:

a. Social and Economic Support Policies and Programmes for the Elderly-Retirement, Pensions and Social care Policies in developed and developing countries. Social security and welfare policies and programmes for elderly in India. National Programmes for Health Care of Elderly (NPHCE); National Policy for Senior Citizens.

b. Organizations Engaged in Wellbeing of Ageing Populations: Helpage International, Dignity Foundation, Age in Action, Age International, Alliance for Aging Research, Alzheimer's Disease International (ADI), The Parkinson Alliance, Geriatrics Societies and Gerontological Associations; Age –friendly world: environment, security and health care.

c. Worldwide Longitudinal Ageing Studies in 40 countries: LASI, SAGE, SHARE, HRS, CHARLS, JSTAR, ELAS, KLoSHA

Reading List

Suggested readings :

1. World Health Organization (2015), *WHO Report on Ageing and Health,* WHO, Geneva.
2. United Nations (1994), *Ageing and the Family*, United Nations, New York
3. United Nations (1998), *Economic and Social Implications of Population Ageing*, Department of International Economic and Social Affairs, UN, New York.
4. United Nations (2001): *Living Arrangements of Older Persons: Critical Issues and Policy Responses*. Population Division, Department of Economic and Social Affairs, Special Issue Nos. 42/43, 2001, New York.
5. UNFPA, 2001, Population Ageing and Development: Social, Health and Gender Issues, United Nations, Malta.
6. Bloom, D.E., D. Canning, et.al. (2002): *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change.* Santa Monica, CA, RAND.
7. Bose, A.B. (2006). *Social Security for the Old. New Delhi*: Concept Publishing Company.
8. Linda J. Waite (ed.) (2004) *Aging, Health, and Public Policy: Demographic and Economic Perspectives*, Supplement to Population and Development Review
9. Irudaya Rajan, (2007) *Social Security for the Elderly Experiences from South Asia,* Routledge, New Delhi.
10. Prskawetz, Bloom, and Lutz, eds., 2008 *Population Aging, Human Capital Accumulation, and Productivity Growth,* A Supplement to Population and Development Review.
11. Sandra Gruescu, (2006), *Population ageing and economic growth.* Physica-Verlag
12. Heslop A (1999), *Ageing and Development*, Social Development Working Paper: 3, Help Age International.
13. M. Alam (2004). Ageing, old age income security and reforms: An exploration of Indian situation. *Economic and Political Weekly*, 39(33): 3731-3740.
14. Pool, Ian, Laura R. Wong and Eric Vilquin (ed) (2006), *Age-structural transitions: challenges for development*. Paris: CIRCRED.
15. Berman, Lisa (2000) "Social Support, Social Networks, Social Cohesion and Health" *Social Work in Health Care* http://dx.doi.org/10.1300/J010v31n02_02.

MSP-E6.1 **45 Hours**

OPERATION RESEARCH IN REPRODUCTIVE HEALTH

I. **Introduction:** What is Operations Research: History, OR in Social Sciences and Health Sciences, Need; Focus and Objective of Operations Research; Types and Recent examples of Operations Research; Successful Examples in Developing and Developed world-(Presentations)

II. **Researchers and Managers-Interface and Roles**: Managers at Different Level (who are those managers); Researchable and Non-researchable problems, Researchers' Role and Responsibilities.

III. **Components of OR Proposal:** Problem statement, Strategies selection, operation definition, Intervention description and design, Sampling, Ethical issues, Data collection and analysis, Utilization, Dissemination and Up-scaling possibilities.

IV. **Identification of Problem and Solution:** Identification and definition, Justification, Alternative Solution, Indicators-Input, Process, Outputs, Outcomes and Impacts, Exercises based on actual situation, Contemporary OR problems

V. **Causality (Randomize Experimental Design):** Random assignment, Matching, Validity, Threat to Validity, Reliability, Pretest-Post test Control Group Design, Post test–only Control Group Design, Multiple Treatment Design, RBD, LBD and Treatment Effects, Preparing a Report on Design used in a few contemporary OR studies

VI. **Quasi/Non-Experimental Design:** Non-Experimental Control Design; Time Series, and Before and After Design, Examples in Different real Situations)

VII. **Inferential Statistics in Operations Research:** X^2, t, F, z-tests, ANOVA and MANOVA, Deciding Sample Size in case of Different Experimental Design, Linking Different, Design and Statistical Test

VIII. Monitoring and Evaluation in Operation Research: Monitoring and Evaluation in OR (Baseline, Concurren and Endline), Logical Framework Approach, Results Based Management, Examples.

IX. Study Design Exercises: Example of different OR studies and discussion on them

X. Ethics in Operations Research: Principals of Research of Ethics, ICMR Guidelines, International Perspectives, NIH-Study Mater Case Studies

XI. Utilization and Dissemination: Conceptual Framework of Utilization, Identifying audience, Developing Media Kit and Policy Brief, Dissemination-Academic and Non-academic activities, Conducting Mock Disseminations Interaction with mangers (local Mumbai or peripheral areas), Field Report Preparation and submission

Reading List

Essential Readings :

1. Brandeau L. Margaret et. al. 2004. Operation Research and Health Care: A Handbook of Methods and Applications, Kulwer Academic Press.
2. Fisher, Andrew A., James R. Foreit, J. Laing, J. Stoeckel and J. Townsend 2002: Designing HIV/AIDS Intervention Studies-An Operations Research Handbook, Population Council, New York.
3. Foreit, James R. and Tomas Frejka 1998: Family Planning Operations Research- A Book of Reading, Population Council, New York
4. Rossi, P.H. et.al. (1993). Evaluation: A Systematic Approach, Sage Publications, London
5. Kish, Leslie 1965: Survey Sampling, New York, John Wiley and Sons.

MSP-E6.2 **45 Hours**

MONITORING AND EVALUATION IN POPULATION & HEALTH

I. **Introduction to Monitoring and Evaluation:** Basic concepts, Difference between Monitoring and Evaluation; Linkage between Planning, Monitoring and Evaluation; Importance of Monitoring and Evaluation

II. **Monitoring and Evaluation Framework**: Resources for monitoring and evaluation, Engagement of stakeholders in monitoring and evaluation; Meaning of Indicators, Ideal requirement, process of developing indicator, illustration of indicators developed from large scale surveys, measurement, need & levels of indicator; Challenges in developing indicators from Large-Scale Surveys; Types of Indicators – Input, Process, Output, Outcome, Impact; Capacity building for monitoring and evaluation

III. **Monitoring of Policy Implementation**: Components of policy and programme, budget, staff, process of evaluation, developing tangible indicators for policy monitoring in terms of Input, Process, Output, Outcome, Impact; Result based inference

IV. **Evaluation Design:** Determination of sample size under different approaches and design including measurement of change due to certain interventions; Quasi Experiment design, Case control design, Evaluation Terms of Reference-Formative and Summative Evaluations, Managing Evaluations; Evaluation at different points: Baseline, Mid-point, Concurrent and End line evaluation; Evaluating for results: Need and Uses of evaluation, Principles, norms and standards for evaluation; Roles and responsibilities in evaluation; Randomization, Statistical design of Randomization; Randomized control trials, time dependant cluster design, interrupted time series analysis.

V. **Assuring the Quality of Evaluation Design and Methodology**: Overview; Defining the context; The evaluation purpose; Focusing the evaluation; Evaluation methodology; Mandatory requirements for programme; SWOT

analysis of NHM, ICDS and National Livelihood Mission; Social audit – meaning, objectives, advantage, case study of social audit

VI. Statistical Approaches of Evaluation of Intervention Programme: Statistical inferences used in different intervention design – z, t, F and paired 't' tests, two stage LSM, instrument variable method; Propensity score matching; Difference in Difference Method: Theory and application, advantage and disadvantage, regression implementation

VII. Management Information System and Use of Technology: MIS – Monitoring information system; Role of programmers; HMIS system; Global Positioning System and use of other technology

Reading List

Suggested reading :

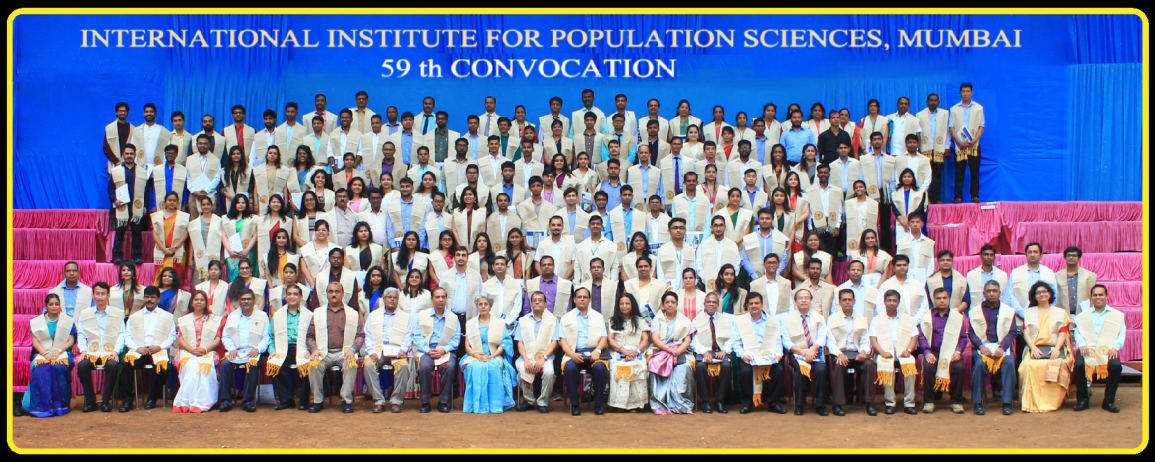
1. Casley, Dennis J and Kumar, Krishna (1988). *The Collection, Analysis, and Use of monitoring and Evaluation Data.* A World Bank Publication, The John Hopkins University Press
2. FHI (2004). *Introduction to Monitoring and Evaluation Monitoring and Evaluation, monitoring hiv/aids programs: A facilitator's training guide.* Family Health International
3. GoI & UNDP (2012). *Guiding Framework for Monitoring and Impact Evaluation of Capacity Building &Training of Panchayati Raj Institutions in States/UTs*. Government of India and United Nation's Development Programme
4. IFRC and RCS (2002). *Handbook for Monitoring and Evaluation*. International Federation of Red Cross and Red Crescent Societies –Geneva
5. NIRD&PR; MoRD and TISS (2016). *Social Audit: A manual for Trainers*. National Institute of Rural Development & Panchayati Raj; Ministry of Rural Development and Tata Institute of Social Sciences
6. Rossi, Peter H.; Mark W. Lipsey and Howard E. Freeman (2004). Evaluation, A Systematic Approach. Seventh Edition. Sage Publications – New Delhi.
7. Sullivan, T.M., Strachan, M., and Timmons, B.K. (2007). *Guide to Monitoring and Evaluating Health Information Products and Services*. Baltimore, Maryland: Center for Communication Programs, Johns Hopkins Bloomberg School of Public Health; Washington, D.C.: Constella Futures; Cambridge, Massachusetts: Management Sciences for Health, 2007

8. UNDP (2009). *Handbook on planning, monitoring and evaluating for development results*. United Nations Development Programme - New York
9. UNESCO (2014). Monitoring and Evaluation Guidance for School Health Programs: Thematic Indicators. United National Educational, Scientific and Cultural Organization.

Coordinators of MA/MSc course

Year	**Coordinators**
2009-11	Dr. P.K. Murthy
2011-13	Dr. H Lhungdim
2013-15	Dr. S Mohanty and Dr. Manas R Pradhan
2015-17	Dr. Chander Shekher and Dr. Aparajita Chattopadhyay
2017-19	Dr. Aparajita Chattopadhyay and Dr. Dipti Govil

MA/MSc Students: 2015-17



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