RULES, REGULATIONS AND SYLLABUS
M.A./M.Sc. Programme

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

The Institute was established in 1956 as the regional centre for training and research in Population Studies for the country of Asia and Pacific region. The International Institute for Population Sciences embraced the present name and was declared a “Deemed University” in 1985 by the Ministry of Human Resource Development, Government of India. The Institute is an autonomous body under the administrative control of the Ministry of Health and Family Welfare, Government of India. This is the only Institute of its kind in the world exclusively devoted to teaching and research in population sciences. Over the last fifty years, the Institute has helped in building a nucleus of professionals in the field of population in various countries in the ESCAP region. Many who were trained at the Institute now occupy key positions in reputed national and international organizations.

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 the population sciences including an in-depth knowledge of the linkages between population and various dimensions of socio-economic, health and environmental development. These courses also provide a comprehensive idea to conduct further research in various aspects of population and development.

Eligibility Criteria for Admission

Candidates with a Bachelor’s degree from recognized universities in India or abroad with a minimum of 55% marks will be eligible for admission to the above programme. Preference shall be given to candidates holding a bachelors degree in one of the following subjects, Mathematics, Statistics, Economics, Psychology, Sociology, Social Work, Geography and Anthropology, Rural Development & Political Science. In addition to the above subjects, applications from non-social science background having experience in population and health related field shall also be considered for admission. 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.

Selection Criteria for the M.A./M.Sc. Program

The selection will be made on the basis of a written test and personal interview. Only shortlisted candidates will be called for the test and interview. Shortlisted candidates appearing for admission test are entitled to claim sleeper class train fare by the shortest route on production of original tickets and in case of road journey normal fare will be paid only for travel by public transport run by a Government body.

Number of Seats and Award of Degrees

There are 50 seats available with the Government of India fellowship.

Fellowships

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.

Duration of the Course

The M.A./M.Sc. program, which is of two academic years comprises four semesters, begins from the first week of August. The first semester ends in the month of December. The second semester starts in the last week of December and ends in month of June next year. The third semester begins again in the month of August and ends in the month of June next year completing of fourth semester.
Conditions for the Award

a) M.A./M.Sc. Program is a full time course. The student shall 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.

Attendance

(1) Minimum of 95 percent of attendance in classes is compulsory to receive full fellowship.
(2) Minimum of 75 percent of attendance in classes is compulsory to appear in exams.
Dissertation

A student is required to write a dissertation on some demographic or related problems under the guidance of a faculty member. The topics of the dissertation have to be submitted at the beginning of the Forth Semesters. The dissertation will be presented in formal seminar of the students and faculty members of the Institute. The content and presentation and participation in the seminar shall be subjected to assessment by a committee comprising of faculty members.

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 "B Minus" in each unit.

Grading System

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

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Numerical Value</th>
<th>Equivalent Marks/Qualitative Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>9</td>
<td>85 and above / Excellent</td>
</tr>
<tr>
<td>A</td>
<td>8</td>
<td>75-84 / Very Good</td>
</tr>
<tr>
<td>A-</td>
<td>7</td>
<td>65-74 / Good</td>
</tr>
<tr>
<td>B+</td>
<td>6</td>
<td>55-64 / Above Average</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>45-54 / Average</td>
</tr>
<tr>
<td>B-</td>
<td>4</td>
<td>35-44 / Below Average</td>
</tr>
<tr>
<td>C+</td>
<td>3</td>
<td>25-34</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>15-24</td>
</tr>
<tr>
<td>C-</td>
<td>1</td>
<td>1-14</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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.
4. A student securing a overall average grade points (OAGP) of less than B Minus, i.e. grade C Plus will not be eligible for the award of the degree.

Written Examination

Written examination will be conducted for Group A, Group B, Group C and Group D Courses.

Re-evaluation of Answer Sheets

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

A student can apply for re-evaluation of his/her answer sheet at a cost of Rs. 500/- per paper.

EVALUATION PROCEDURE FOR DISSERTATION

A. Dissertation

The dissertation will be of 8 credits. Each of the students is given appropriate weightage for initiative and interest (by his/her internal examiner) and for the paper presentation and defence.
However, the content of the dissertation will be examined by an evaluation committee appointed by the Director. The break-up of weight is as follows:

<table>
<thead>
<tr>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initiative and Interest (by Guide)</td>
</tr>
<tr>
<td>2. Presentation and Defense (by Evaluation Committee)</td>
</tr>
<tr>
<td>3. Contents (by Evaluation Committee)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

**Re-Examination**

1. Re-examination will not be conducted during the course period.
2. Those students who fail or could not appear in any examination will be allowed to re-appear in a paper in the next semester examinations.
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 in re-examinations.
6. 50 Percent of clearance of the total papers in each semester is compulsory to continue the study in next semester.

**Number of Course Units, Credits, Lectures, Laboratory Sessions and Assignment**

<table>
<thead>
<tr>
<th>Course</th>
<th>Unit</th>
<th>Credit</th>
<th>Lectures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Semester - I (4 Units)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1 Mathematical Methods</td>
<td>½</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>A2 Statistics</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>A3 Economic &amp; Geography</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>A4 Sociology, Psychology and Anthropology</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>B1 Introduction to demography and sources of demographic data</td>
<td>½</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td><strong>Semester – II (5 Units)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2 Fertility</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>B3 Nuptiality</td>
<td>½</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>B4 Mortality, Morbidity and Public Health</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>B5 Migration &amp; Urbanization</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>B6 Evaluation and Adjustments of Demographic Data and Population Projections</td>
<td>½</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>C1 Reproductive Health</td>
<td>½</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td><strong>V1 Viva Voce</strong></td>
<td>½</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Semester – III (3 ½ Units)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2 Gender Issues</td>
<td>½</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>C3 Population and Development</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>C4 Population Policy, Programmes and Evaluation of Health and Family Welfare Programme</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>C5 Research Methodology</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td><strong>Semester – IV (4 ½ Units)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1 Population Ageing</td>
<td>½</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>D2 Optional Paper</td>
<td>1</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>D2-i Health Economics</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D2-ii Biostatistics and Epidemiology</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D2-iii Operation Research</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D2-iv Gender, Development and Health</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D2-v Population and Sustainable Development</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Each lecture is one hour duration;

A one-unit course (4 credits) involves 48 hours of classroom lecture while a half-unit course (2 credits) is composed of 24 hours of lecture. A student is expected to take all the preparatory and main courses and one of the optional courses. The performance of a student is evaluated through a combination of assignments, written examination and comprehensive viva-voce.

### Schedule of Fees

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Indian Students (Rs.)</th>
<th>Foreign Students (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A: Non Refundable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admission Fee</td>
<td>500</td>
<td>200</td>
</tr>
<tr>
<td>Tuition Fee (Per Year)</td>
<td>8000</td>
<td>7000</td>
</tr>
<tr>
<td>Computer Fee (Per Year)</td>
<td>2500</td>
<td>--</td>
</tr>
<tr>
<td>Examination Fee (Per Sem)</td>
<td>500</td>
<td>--</td>
</tr>
<tr>
<td>Re-examination Fee (Per Paper)</td>
<td>500</td>
<td>--</td>
</tr>
<tr>
<td>Re-evaluation Fee (Per Paper)</td>
<td>500</td>
<td>--</td>
</tr>
<tr>
<td>Thesis Submission Fee</td>
<td>500</td>
<td>50</td>
</tr>
<tr>
<td>Thesis re-submission Fee</td>
<td>500</td>
<td>--</td>
</tr>
<tr>
<td>Provisional Certificate Fee</td>
<td>100</td>
<td>--</td>
</tr>
<tr>
<td>Degree Certificate Fee</td>
<td>200</td>
<td>--</td>
</tr>
<tr>
<td>Library Fee (Per Year)</td>
<td>800</td>
<td>--</td>
</tr>
<tr>
<td>Medical Examination Fee</td>
<td>200</td>
<td>--</td>
</tr>
<tr>
<td>Sport/Cultural Fee (Per Year)</td>
<td>1000</td>
<td>--</td>
</tr>
<tr>
<td>Duplicate Certificate Fee</td>
<td>800</td>
<td>--</td>
</tr>
<tr>
<td>Migration Certificate Fee</td>
<td>100</td>
<td>--</td>
</tr>
<tr>
<td>Transcript Fee (For Two Sets)</td>
<td>500</td>
<td>50</td>
</tr>
<tr>
<td>Duplicate I-card Fee</td>
<td>100</td>
<td>--</td>
</tr>
<tr>
<td>Hostel Accommodation Charges (Per Month)</td>
<td>400</td>
<td>300</td>
</tr>
<tr>
<td><strong>Refundable Deposits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>2000</td>
<td>100</td>
</tr>
<tr>
<td>Dining Hall</td>
<td>2000</td>
<td>--</td>
</tr>
<tr>
<td><strong>B: Processing Fee (Non-Refundable)</strong></td>
<td>500</td>
<td>--</td>
</tr>
<tr>
<td>Convocation Charges</td>
<td>500</td>
<td>50</td>
</tr>
</tbody>
</table>

Note: 50% Concession on Tuition Fees to students from SAARC Countries.
**Objective:** This course aims to provide students with basic knowledge of mathematical techniques which can be useful to in understating demographic techniques.

1. Concept of number system, constants, variables and functions; Linear and quadratic functions; Graphic representation of linear and quadratic functions; Solutions of linear and quadratic equations.
2. Sequences; Progressions: arithmetic and geometric progressions.
3. Logarithms: properties of logarithms, use of common logarithms in numerical calculations.
4. Permutations and Combinations; binomial and exponential functions.
5. Rates and Ratios.
7. Concepts of limits; differentiation and integration.
8. Interpolation, Extrapolation and its applications in Demography (converting 10 years age group data into 5 years and 5 years age group data into single year).

**Reading List**

Concept of dispersion: measures of dispersion- Range, Variance, Standard Deviation, Coefficient of variation; Merits and demerits of different measures of dispersion. Moments Measures of Skewness and Kurtosis.

Analysis of nominal and ordinal level data- contingency table, odds ratios; partial odds.

Basics of set theory, Events: exhaustive, mutually exclusive events, Concept of probability, A-priory, and mathematical definitions of probability; Laws of probability, conditional probability, additive and multiplicative laws of probability.

Discrete probability distributions: 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 bivariate data.


Testing statistical hypothesis and test of significance. Testing the difference of means and proportions: t-test for small samples and tests based on normal distribution for large samples. Testing the association of attributes and Chi-square goodness of fit.

**Essential Readings**

5. Lipshutz, Seymour., *Set Theory and Related Topics*, Schaum’s Outline Series, Mcgraw Hill.

**Suggested Readings**

1. ECONOMICS

Objective: 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.

Keywords: micro and macro economics, factors of production, demand, supply, prices, utility, GDP, NDP, GNP, PCI, consumption, savings, investment, economic theories, five year plans.

I. 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

II. 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

III. 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

IV. 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

V. 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
VI. 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:

7. Sury, M.M. (2008), India’s Five Year Plans I to XI, New Delhi, New Century

2. GEOGRAPHY

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.

Key words- man and nature, regions, agriculture, energy, industry

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, Human settlement development: 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 political geography.

Reading List:

   Goegraphy.
   Co. New Delhi.
5. Government of India, Statistical Abstract of India (2004), Central Statistical Organization,
   New Delhi.

A4 SOCIOLOGY, PSYCHOLOGY & ANTHROPOLOGY 48 Hours

1. The Nature of Human Society:
   The Study of Human Society:
   a) The Sociological/Anthropological point of views, b) The Value of Sociology and
   Anthropology and c) Perspectives in Sociology and Anthropology

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

3. 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

4. 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'
5. 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
   3. 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

6. Tribes in India:
   a) Definition of Tribe/ Scheduled Tribe, b) Special distribution, c) Composition   d) Size and Growth
   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.

7. 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

8. Social Psychological Concepts:
   1. Psychology as a Discipline:
      - Branches and dominant Psychological thoughts
      - Psychoanalysis: Cognitive Behaviour
   2. Social Psychological Concepts and its relevance to Population Studies
      - Personality Motivation, Attitude, Behaviour
   3. Learning and Communication Processes:
      Concept, Meaning, Scope, and need in the Context of Population Studies.

Reading List

Essential Readings

**Suggested Readings**

Learning objectives:

This is the first topic in population studies to be taught to MA students. The basic objective to include this topic is to introduce students the scope of the subject of population studies which they will be learning in the subsequent courses. At the end of the 24 lectures the students are expected to get clear idea of the evolution and present scope of the discipline, past, present and future scenario of population and sex-age structure of the world, major regions and India, concept of demographic transition. They also get clear idea of various sources of demographic data with focus on Indian censuses and Indian registration system.

Course Contents:

1. Introduction to Demography.
   a. Definition and Scope: Evolution of demography as a scientific discipline; Nature and scope of demography and changes in it over the time. Multi-disciplinary nature of demography, its links with other social science disciplines. Basic demographic concepts. Components of population change.
   b. Demographic transition (description rather than theory).
   c. Historical population trend, world and India. Past, present and future population trends across world, continents, major regions, India and Indian states, with brief description of causes.

2. Sources of Demographic Data.
   a. Data requirement, type of demographic data.
   b. Different sources of data.
   c. Population censuses across the world. Indian censuses, details of different items on which Indian censuses collect data.
   d. Vital registration system, sample registration system, survey on causes of death.
   e. National Sample Survey Organization’s surveys, details of different rounds collecting population and health data.
f. Nationwide sample surveys, National Family Health Survey, District Level Household Survey, etc.

3. Age-Sex Structure and its Dynamics.
   a. Role of the study of age-sex structure in demography.
   b. Present levels, past trends and probable future changes in age-sex structure of the world and major regions.
   c. Present levels, past trends and probable future changes in age-sex structure of India and states.
   d. Determinants and consequences of sex-age structure of population. Demographic dividend.

Essential Readings:


<table>
<thead>
<tr>
<th>B2</th>
<th>FERTILITY</th>
<th>48 Hours</th>
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Learning Objectives
After completion of this course the student will be able to:
- Distinguish among different terms used for fertility study
- Describe physiology of human reproduction and methods of family planning
- Identify different sources of data to calculate different indicators of fertility
- Understand levels, trends and differentials in fertility
- Describe and analyze the framework for fertility analysis
- Calculate and interpret different indicators of fertility

A. FERTILITY CONCEPTS, THEORIES, LEVELS AND TRENDS

1. 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.
2. **Sources of Data for Fertility Study**
   Census, Sample Registration System, National Family Health Survey, District Level Household Survey – Reproductive and Child Health

3. **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.

4. **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.

5. **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;

6. **Hypothesis and Theories of Fertility**

**Reading List for Fertility (Section A)**


**B. 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, 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 (GFRi) or (GOSFR)
  – Age-Order Specific Fertility Rate (AOSFRi)
  – Total Order Specific Fertility Rate (TFRi) 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 (Section B)**

**Essential Readings**


Suggested Readings


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<th>NUPTIALITY</th>
<th>24 Hours</th>
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<td>Introduction, Basic Concepts, Sources of Data and their limitations.</td>
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<td>Measures of Nuptiality from Registration data.</td>
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<td>Analysis of Marital Status Data from Census.</td>
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<td>Singulate Mean Age at Marriage (SMAM)</td>
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<td>b.</td>
<td>- Synthetic Cohort and Decadal Synthetic Cohort Method.</td>
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<tr>
<td>a.</td>
<td>Indices of Nuptiality (Coale’s Indices)</td>
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<td>4.</td>
<td>Marriage Pattern in India and Selected Countries and related factors.</td>
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<td>5.</td>
<td>Marriage squeeze: Concepts and Implications</td>
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<td>7.</td>
<td>Multistate approach in Nuptiality analysis.</td>
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<td>8.</td>
<td>Standard Age Pattern of Marriage – Coale’s Model.</td>
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<td>9.</td>
<td>Divorce and Widowhood.</td>
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<tr>
<td>a.</td>
<td>Definition and basic measures.</td>
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<td>b.</td>
<td>Marriage Dissolution Tables.</td>
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<td>c.</td>
<td>Mean Age at Widowhood/Divorce from Census Returns.</td>
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<tr>
<td>d.</td>
<td>Levels and Trends in Widowhood in India and Selected Countries.</td>
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<td>e.</td>
<td>Impact of Changes in Widowhood/Divorce on Fertility.</td>
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<td>10.</td>
<td>Definition and Measures of Remarriages of Widowed and Divorces.</td>
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Reading List

Essential Readings


Suggested Readings


1. 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.

2. 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

3. **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

4. **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

5. **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.

6. **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

7. **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**


**Suggested Readings**

Objectives:

The aim of this course is to familiarize the M.A./M.Sc., in Population Sciences' students 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.

Key Words: migration, urbanisation, internal migration, international migration, patterns, trends, causes, consequences, urbanization, spatial distribution

A. 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

B: 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

Suggested Readings


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| B6 | EVALUATION AND ADJUSTMENT OF DEMOGRAPHIC DATA AND POPULATION PROJECTIONS | 24 Hours |

**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:**

1. Types of errors, coverage and content errors. Sources of errors.
2. Examples of data on survey and census data affected by errors.
3. Post-enumeration surveys; dual record system.
4. Techniques of evaluation of age data using Whipple’s index, Myer’s index, UN Joint score.
5. Quality checks incorporated in survey procedures to minimize errors.
6. 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.


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

# SEMESTER - III

## C1 REPRODUCTIVE HEALTH

### 24 Hours

**Objectives and Goal:** This course 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.

1. **Introduction to reproductive health**
   a. Definition and rationale of RH approach,
   b. Evolution of ideas about reproductive health
   c. Components of RH and life cycle approach of RH
   d. Recommendations from ICPD

2. **Physiology of human reproduction**
   a. Male and female reproductive system; Conception, Pregnancy
   b. Customs, and taboos related to menstruation and puberty in different societies

3. **Maternal and obstetric morbidity**
   a. Maternal morbidity, safe motherhood programmes, emergency obstetric care
   b. Cultural practices during pregnancy, childbearing and its impact on health of women
   c. Effects of maternal death on family
   d. Strategies to reduce maternal morbidity and mortality

4. **Abortion and related issues**
   a. Spontaneous, induced abortion, legal and illegal abortions, safe and unsafe abortions and consequences of unsafe abortions
   b. Laws regarding abortion.

5. **Infertility**
   a. 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.

6. **Gynecological and contraceptive morbidity**
   a. Anemia, Breast, Cervical, Ovarian, Prostate Cancer; Behavioural risk factors
   b. Contraceptive morbidity related to different methods.

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

8. Male Reproductive Health Issues

a. Men’s reproductive health services
b. Men’s role in women’s health,
c. Strategies to reaching out to men.

9. Adolescent and Menopausal women

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

10. Gender and Reproductive Health

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

11. Reproductive rights and ethical issues

a. Human rights and values
b. Ethical values in RH services; information, liberty of choice
c. Professional and ethical issues

Essential Reading List


Suggested Reading List

C2 GENDER ISSUES IN POPULATION STUDIES 24 Hours

Objective and goal: The objective of this course 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.

Course outline

A. Basic terms and concepts


B. 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.

C. 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.

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D. 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.

E. 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:


Suggested Readings:


### C3 POPULATION, DEVELOPMENT
48 Hours

#### A. 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.

#### B. 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.

#### C. 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.

D. 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.

E. 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.
Essential Readings:


Suggested Readings:

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.

Course contents:

A. 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.


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.


B. 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).

**C. EVALUATION OF FAMILY WELFARE PROGRAMME**

What is evaluation of the programme, objectives of the evaluation. Types of evaluations. Framework 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.


**Suggested Reading List:**

**Goal and Objective of the course:** The main objective of this course is to impart students 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.

1. **Scientific Methods of Research**

2. **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.

3. **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.

4. **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.

5. **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.
6. **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.

7. **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

8. **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

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**Essential Reading List**

The aims of this course are:

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 develop skills to analyze trends and determinants of population ageing and its consequences
3) To build capacity to use theoretical and empirical advancements to develop strategies, policies and programmes to meet challenges of population ageing and plan for health care and 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 patterns; Population ageing trends and patterns in India; state variations; future scenario of population ageing in states

II Life Course Perspective and Social Dynamics of Ageing:
A. 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 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; health adjusted life expectancy
B. Ageing and Burden of Disease: burden of chronic and multiple diseases, burden of non-communicable diseases, dual burden of communicable and non-communicable in developed and developing countries; Indian scenario.
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; health expectancies.
Ageing and mental health problems; cognition, memory loss, dementia and depression
D. Ageing, health care and health financing: health care utilization, public and private health services utilization; outpatient and inpatient health care utilization; availability and accessibility to geriatric care, and institutional care; sources of health spending; lack of health care options for elderly.

IV Population Ageing and Economic Conditions:
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.

V Ageing Policies and Programmes:
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.

Reading List
D2 Optional Papers

| D2-i | HEALTH ECONOMICS | 48 Hours |

Aim and General description

Health economics is a growing field of economics primarily dealing with issues relating to scarcity in the allocation of health and health care. In the recent past, some of the policies by the state and federal governments have involved issues that have been analyzed by the health economists. Thus the aim of this proposed course is to familiarize the students with economic ideas and motivate them into undertaking future research and build their careers.

This is an introductory course giving the application of economic principles to policy relevant questions in the arena of health and health care. The course begins with an overview of health economics and students will learn about the health care sector and how to apply economic tools in analyzing structure and performance of health care sector. The course is divided into eight units. The units I to IV cover all theoretical aspects of the health economics while the units V to VIII deal with applications of various tools and methods. Additionally, students will also learn to use the welfare economics tools to examine market failures and interventions, behavior of each of the agent in the health market – consumers, suppliers and insurers with respect to efficiency and equity issues. At the later stage, students are introduced to basic concepts and methods for evaluation of health care programmes, such as cost effectiveness analysis and cost benefit analysis, and discussing how these evaluative principles are used in assessing “value for money” in health care.

Teaching Strategy: Teaching by class room lectures, seminars, case studies and group exercise.


II: Costing and Health Economics: The importance of costing in Health Economics, Alternative definitions of cost, Cost theory and cost analysis, types of cost - monetary and non-monetary, measurement and valuation issues in cost, production cost and discounting, Constraints in measuring health cost.


IV Economic Evaluation – Part II: Importance of Measures of General health status and quality of life, Measuring Health Outcomes, Assigning monetary values to health outcomes, human life and Quality Adjusted Years of Life, Cost-Utility Analysis (CUA) – including 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)

V: Efficiency and Equity in Health: An overview of the normative economics of the health sector, Health Care and Welfare State, Private versus public health care, Public and Private Partnership in Health Care, Efficiency and effectiveness in health care, Equity in Health care Delivery
Health inequalities: health inequality and its measurement, Changing scenario of Health inequalities in India, Medical Tourism in India, International Comparison, determinants of health, health seeking and access to health care service, Health care utilization.

VI: Health Care System with Special reference to India: Stakeholders in health care systems: Consumer, providers, and state, Human capital and health, health care and labor market, Demand for health care and for medical services – The consumer perspective, Moral Hazard and the economics of Moral Hazard, Demand and Supply of Human and physical infrastructure–physician, hospital and drugs etc. Costs as a barrier to health care utilization.

VII: Policies, Reforms and Regulatory Concerns in Health Sector in India: Health care delivery systems and Role of Government in providing health care, Role of international organizations, improving access to health care with quality, Overview of health sector reforms and Policies, Regulatory concerns and regulation of health sector including pharmaceutical industry, National Health Policies and Programmes.

VIII: Health Financing and Health Insurance:

National Health Accounting: Sources and Uses of Funds, health budgeting, Interrelationship between epidemiological transition and health expenditure, Health care financing system, source of health care spending, The Health Insurance – intermediary agent, The private health insurance, Regulation of health insurance, Government as health insurer in India, Equity in health care finances, Future investment strategies in health sector, Willingness to pay for health care, User charges as determinant of health financing

Text Books
4. Health economise: 3rd Edition by Phelps
5. The economics of health and health care, 2nd edition by Folland, Goodman and Stono (FGS)

Suggested Readings

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17. MOHFW, National Rural Health Mission
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.

A. Basic Concepts in Epidemiology
1. *Introduction*: Definition and objectives of epidemiology; Epidemiology and clinical practice; The epidemiologic approach; Infectious disease epidemiology, occupational epidemiology, disaster epidemiology
2. *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.
3. *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.
4. *Epidemiology and public policy*: Epidemiology and prevention; Population versus high-risk approaches to prevention; epidemiology and clinical medicine; Risk assessment; Meta Analysis.

B. Research Design
1. **Using epidemiology to identify the cause of disease**: Cohort studies – design, types of cohort studies, potential biases in cohort studies, when cohort study warranted; Case-control study – design, selection of cases and controls, problems in control selection, matching, problems of recall, use of multiple controls, when case control study warranted, nested case-control study; cross-sectional studies.

2. **Introduction to sampling techniques**: Introduction to sampling; Simple random and systematic sampling; Sample size and power estimation; Stratified sampling; Cluster sampling; Concept of design effect and its estimation; Concept of weighting; Sampling and non-sampling errors.

3. **Design and elements of research proposal**

C. **Measurement of Health & Disease Burden**

1. **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.

2. **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.

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

5. **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.

D. **Clinical Trials (12 Hours)**

1. **Basic concepts of clinical trials**: Basic concepts; Definitions; Historical perspectives.

2. **Classification of trials by design and purpose**: Phase I, II, III and IV trials; Use of control arms; Concepts of randomization and blinding.

3. **Clinical trial designs**: Completely randomized designs; Factorial designs; Crossover designs; Cluster randomized designs.

4. **Size of clinical trials**: Concept of factors influencing clinical trial size; Estimation of size for qualitative and quantitative outcome measurements.
5. **Planning and conduct of clinical trials:** Protocol development; Multicentric trials; Deviations from protocol; Stopping rules; Consideration of adverse effects and non-compliance.

6. **Ethical issues:** Ethical issues in clinical research; ICMR guidelines on ethical issues in medical research.

7. **Data safety and monitoring concepts.**

E. **Hypothesis Testing**

1. **Hypothesis testing:** Introduce hypothesis testing; Hypothesis testing for a single mean; z and t tests for a single mean; Confidence interval equivalences; p-values.

2. **Power and sample size and two group tests:** Power; Power for a one-sided normal test; Power for t-test; Paired difference hypothesis tests; Independent group differences hypothesis tests.

3. **Test for binomial proportions:** Test for a binomial proportion; Score test versus Wald; Exact binomial test; Tests for differences in binomial proportions; Intervals for differences in binomial proportions.

4. **Fisher’s exact tests, chi-squared tests:** Introduce Fisher’s exact test; Chi-squared test for equivalence of two binomial proportions; Chi-squared tests for independence; Chi-squared tests for goodness of fit.

5. **Methods for matched pairs, McNemar’s, conditional versus marginal odds ratios:** Hypothesis tests of marginal homogeneity; Estimating marginal risk difference; Estimating marginal odds ratios; Distinction between conditional and marginal odds ratios.

6. **Meta analysis**

F. **Advanced Biostatistical Methods**

1. **Linear regression:** Simple linear regression; Relating a continuous outcome to more than one predictor: multiple linear regression; Diagnostics in multiple linear regression.

2. **Logistic regression:** Logistic regression, Multiple logistic regression; conditional logistic models for matched case-control data.

3. **Survival analysis:** Concepts and definitions; concept of censuring; survival, hazard and cumulative hazard function; survival distributions; Kaplan Meir estimates; Life table method; Mantel-Haensal test; Regression for survival analysis; Multivariate survival analysis.

4. **Analysis of count data:** Poisson model; Negative binomial model; Applications.
5. **Random effects models**: Random effects models; Random slope model; Random intercept model; Use of random effects models in population and health related data; Hierarchical data analysis.

6. **Path analysis and discriminant analysis**

7. **Exploratory data analysis and handling missing data**: Outlier detection, imputation techniques; Application of sample weights

**Reading List:**

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) (8)

Researchers and Managers-Interface and Roles: Managers at Different Level (who are those managers); Researchable and Non-researchable problems, Researchers’ Role and Responsibilities . (3)

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 . (2)

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 (Presentations) (10)

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 (Presentations) (7)

Quasi/Non-Experimental Design: Non-Experimental Control Design; Time Series, and Before and After Design, Examples in Different real Situations), Presentations (5)

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, Presentations (5)

Monitoring and Evaluation in Operation Research: Monitoring and Evaluation in OR (Baseline, Concurren and Endline), Logical Framework Approach, Results Based Management, Examples. (5)

Ethics in Operations Research: Principals of Research of Ethics, ICMR Guidelines, International Perspectives, NIH-Study Mater Case Studies (5)

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 (15)

Essential Reading List:


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.

**Section 1: 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

**Section 2: 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

**Section 3: 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

Section 4: 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:


**Suggested Readings:**

BACKGROUND

Sustainable development is defined as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’. In principle, it aims at improving human well-being, by alleviating poverty, increasing gender equality, and improving health, human resources, and natural environment. The philosophy of sustainable development insists that decisions taken at every level throughout the society should have due regard to their possible environmental consequences. The International Conference on Population and Development (ICPD) in 1994 argued that population policy should be oriented towards improving social conditions and expanding choices for individuals by focusing on people – their rights, capabilities, and opportunities. This would benefit the individuals, society, and the sustainable relationship with the environment. Research evidence indicates that population growth, distribution and development are closely linked with environment. The 1992 Rio Declaration convincingly stated that human beings are at the centre of concern for sustainable development. In other words, if we do not put the human population at the core of the sustainable development agenda, the efforts towards improving human well-being and environment protection will fail. This paper attempts to address the theoretical and empirical advancements and the strategies and concerns regarding population-environment-development linkages.

MA/MSc course already have a compulsory paper on “Population and Development”. Efforts have been made not to repeat the topics covered in that paper. However, certain level of overlapping cannot be avoided.

**Objectives of this paper:**
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.

**Course Outline:**
48 hours of Lecture including assignments, case studies, lab exercises and debates. The class room discussions, readings, writing assignments and exams are designed to encourage the students to develop tools for understanding sustainable development and use analytical skills.

**Modules**

1. **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.

2. **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

3. Population-environment linkages

Ecological and environmental dimensions of sustainable development; Approaches to environment; Gandhian approach, Marxist/Socialist approach, Neo-classical approach, Market approach; Population growth and climate change; Population matters to sustainable development and environment (growth, age structure, spatial distribution)

4. 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.

5. 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.

6. 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.

7. 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.

8. 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
9. 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, sustainable development and environment nexus.

Suggested Readings


## INTRODUCTION TO DEMOGRAPHIC AND STATISTICAL SOFTWARES

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<tr>
<td>1.</td>
<td>Basics of MORTPAK4, SPECTRUM and applications.</td>
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<td>2.</td>
<td>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.</td>
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<td>3.</td>
<td>Introduction to STATA, generating, variables, commands and do file editor. Survey analysis – estimation of mean, proportion, design.</td>
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<td>5.</td>
<td>Large scale data handling – (using NFHS, DLHS, NSSO) Merging, splitting data and formatting.</td>
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<td>6.</td>
<td>Introduction to GIS and illustration.</td>
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### References

2. *SPSS regression models 14.0* - SPSS Inc.
3. *SPSS advanced models 14.0* - SPSS Inc.

E. & O. E.