

As Per NEP 2020

University of Mumbai



Syllabus for Basket of OE	
Board of Studies in Statistics	
UG First Year Programme	
Semester - I	
Title of Paper	Credits 2
I) Introduction to Social Statistics	2 credit
II)	
III)	
From the Academic Year	2024-25

Semester-I Open Elective-II

Name of the Course: Introduction to Social Statistics.

Sr.No.	Heading	Particulars	
1	Description the course: Including but Not limited to:	Introduction This course is highly relevant in today's data-driven world, where accurate and comprehensive statistical information is crucial for informed decision-making in various sectors. Understanding the operations and significance of the National Statistical Organization (NSO) provides students with insights into how data is collected, analysed, and utilized at a national level. The course equips students with practical skills and knowledge applicable across industries and sectors. Understanding social statistics, sector-wise statistics, and national accounts empowers students to interpret and analyse data effectively, making them valuable assets in fields such as government, research, consulting, finance, and academia. Students learn to apply statistical methodologies, survey techniques, and census analysis in real-world scenarios. This knowledge enables them to contribute meaningfully to policy formulation, program evaluation, market research, and strategic decision-making in diverse organizational settings. The course appeals to individuals interested in data analysis, policy research, social sciences, economics, and public administration. It caters to students passionate about understanding socio-economic trends, demographic dynamics, and the impact of government policies on society and the economy. This course complements studies in economics, sociology, public policy, and data science by providing a specialized focus on statistical methods, survey design, and data interpretation within the context of national statistical systems. There is a growing demand for professionals with expertise in statistical analysis, data interpretation, and research methodologies across various industries. Graduates of this course are sought after by government agencies, research institutes, international organizations, NGOs, financial institutions, and consulting firms for roles such as statisticians, data analysts, policy analysts,	

		research associates, and project managers. Graduates can pursue a range of rewarding career paths, including positions in government statistical agencies (e.g., NSO, NSSO), research organizations, private sector companies (e.g., market research firms, financial institutions), and international organizations (e.g., United Nations, World Bank). Job prospects include roles in data analysis, policy research, program evaluation, market intelligence, and strategic planning, offering diverse opportunities for professional growth and impact.	
2	Vertical :	Open Elective	
3	Type :	Theory	
4	Credits :	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)	
5	Hours Allotted :	30 Hours	
6	Marks Allotted:	50 Marks	
7	Course Objectives(CO): CO1: Understand the foundational principles and structures of the National Statistical Organization (NSO), including its vision, mission, and the roles of NSSO and CSO. CO2: Explore the landscape of social statistics in India, focusing on its importance, alignment with Sustainable Development Goals (SDGs), and the responsibilities of social and welfare statistics units. CO3: Gain insights into sector-wise statistics in key areas such as agriculture, health, education, and women and child development, including the significance of various surveys and census activities. CO4: Develop a comprehensive understanding of national accounts and population census, including their objectives, methodologies, and significance in policy formulation and decision-making. CO5: Understand the principles underlying sample surveys, including the objectives, population and sample selection, sampling frame, and units. CO6: Gain proficiency in designing questionnaires and schedules for effective data collection in sample surveys. CO7: Familiarize with various methods of data collection employed in sample surveys and their applicability in different contexts.		

	CO8: Develop skills in summarizing, analysing, and interpreting data obtained from sample surveys to draw meaningful conclusions.	
8	Course Outcomes (OC): OC1: Students will be able to articulate the vision, mission, and organizational structure of the National Statistical Organization (NSO), along with the distinct roles and responsibilities of NSSO and CSO. OC2: Upon completion of the course, students will demonstrate a nuanced understanding of social statistics in India, including the integration of statistical efforts with Sustainable Development Goals (SDGs) and the functions of social and welfare statistics units. OC3: Students will acquire knowledge of sector-wise statistics in key domains such as agriculture, health, education, and women and child development, enabling them to identify important surveys, census activities, indicators, and relevant agencies. OC4: By the end of the course, students will possess a thorough understanding of national accounts and population census, allowing them to appreciate their significance in providing insights into the economy, demographics, and socio-economic dynamics of India. OC5: Students will be able to articulate the principles of sample surveys, including the rationale behind survey objectives, population selection, and sampling techniques. OC6: Upon completion of the course, students will demonstrate competence in designing questionnaires and schedules tailored to specific survey objectives and target populations. OC7: Students will be proficient in applying diverse data collection methods, such as interviews, observations, and electronic surveys, in sample survey contexts. OC8: By the end of the course, students will possess the ability to summarize, analyse, and interpret survey data using appropriate statistical techniques, thereby effectively communicating insights derived from sample surveys.	
9	Modules: - Module 1:	Lectures

	1. Social statistics in India: Introduction, SDG's, Social and welfare statistics unit, Environment statistics unit and their responsibilities, NSSO and CSO roles and responsibilities (NSO) 2. Sector Wise Statistics: Agriculture, Health, Education, Women and Child etc. Important Surveys & Census (IIP, Annual survey of industries, Economic census), Indicators, Agencies and Usages etc. 3. Data Collection and Types: Primary data – Concept of a Questionnaire and a Schedule, Secondary Data Types of data: Qualitative and Quantitative Data, Discrete and Continuous Data 4. Measures of central tendency – i) Mean or Arithmetic mean ii) Median and iii) Mode 5. Measures of dispersion – Absolute and Relative measures of dispersion: Range, Mean absolute deviation, Standard deviation & Coefficient of Variation	15
	Module 2:	
	1. Principles of Sample survey – Objectives of the survey, population and sample, sampling frame and units, data to be collected, Questionnaire and schedule designing, methods of data collection, summary and analysis of the data (Description) (Refer some case study to relate all these points) 2. Graphs and diagrams: Bar Charts, Multiple and subdivided bar chart, Pie chart, heat map 3. Index Numbers: Different Types, Need, Data Collection Mechanism, Periodicity, Uses 4. Correlation and Regression – Concept, Meaning, formulae (Without proof) and calculations with the help of an example 5. Demography – Proportion and rates, Crude Death (Mortality) Rate (CDR), Age Specific Death (Mortality) Rates, Infant Mortality Rate (IMR), Crude Birth Rate (CBR), General Fertility Rate (GFR), Gross Reproduction Rate (GRR), Net Reproduction Rate (NRR), Sex Ratio	15
11	References 1. Fundamentals of applied statistics: S.C. Gupta and V. K. Kapoor 2. Fundamentals of statistics Vol – 2: AM Gun, MK Gupta, B Dasgupta 3. MoSPI Website 4. SSD Publication	

Format of Question Paper:
Internal Continuous Assessment: (20 marks)

Assignment/viva Quizzes, Class Tests, presentation, project, assignment etc	Class Test	Total
05	15	20

Semester End Examination: (30 marks)

Semester End Examination will be of 30 marks of 01 hour duration covering entire syllabus of the semester. All questions are Compulsory.

Theory Question Paper Pattern:

Q 1	Attempt any one question out of two questions (Module I and II)	Max. marks: 10
Q 2	Attempt any two questions out of three questions (Module I)	Max. marks: 10
Q 3	Attempt any two questions out of three questions (Module II)	Max. marks: 10

**Sign of the BOS
Chairman
Dr. Santosh Gite
Board of Studies in
Statistics**

**Sign of the
Offg. Associate Dean
Dr. Madhav R. Rajwade
Faculty of Science &
Technology**

**Sign of the
Offg. Dean
Prof. Shivram S. Garje
Faculty of Science &
Technology**

