|  |  |  |
| --- | --- | --- |
| NAME OF THE  DEPARTMENT | Department of Statistics | |
| PROGRAMME CODE AND PROGRAMME  NAME |  | |
| PROGRAMME OUTCOMES **(POs)** | PO.1 | Not Applicable |
| PO.2 |  |
| PO.3. |  |
| PO.4 |  |
| PO.5 |  |
| PO.6 |  |
| PROGRAMME SPECIFIC OUTCOMES **(PSOs)** | PSO.1. | Not Applicable |
| PSO.2. |  |
| PSO.3. |  |
| PSO.4. |  |
| PSO. 5. |  |
| PSO.6. |  |
|  |  | **Semester I** |
| COURSE CODE, COURSE NAME AND COURSE  OUTCOMES (**CO**s) |  | INTRODUCTORY STATISTICS (STA1C01) |
|  | CO.1. | Study of official statistics |
|  | CO.2. | Summarize data graphically by displaying data using methods from descriptive statistics |
|  | CO.3. | interpreting data in tables graphically by using histograms, frequency distributions, box-and whisker (five-number summary) |

|  |  |  |
| --- | --- | --- |
|  | CO.4. | find measures of central tendency for data sets: mean, median, and mode |
|  | CO.5 | find measures of variation for data sets: standard deviation, variance, and range |
|  | CO.6. | relative positions of data and distinguish among scales of measurements and their implications |
|  | CO.7. | identify the standard method of obtaining data and the advantages and disadvantages of each. |
|  | CO.8. | Develop a comprehensive understanding of the concept of index numbers and their role in economic and statistical analysis. |
|  |  | **Semester II** |
| COURSE CODE, COURSE NAME AND COURSE  OUTCOMES (**CO**s) |  | PROBABILITY THEORY (STA2C02) |
|  | CO.1. | Calculate probabilities by applying probability laws and theoretical results. |
|  | CO.2. | Identify an appropriate probability distribution for a given discrete or continuous random variable and use its properties to calculate probabilities |
|  | CO.3. | Derive probability distributions of functions of random variables. |
|  | CO.4. | Derive expressions for measures such as the mean and variance of common probability distributions using calculus and algebra. |
|  | CO.5 | Calculate probabilities for joint distributions including marginal and conditional probabilities. |
|  | CO.6. | For jointly distributed random variables calculate their covariance and correlation and determine whether they are independent. |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Semester III** | |
| COURSE CODE, COURSE NAME AND COURSE  OUTCOMES (**CO**s) |  | PROBABILITY DISTRIBUTION AND SAMPLING THEORY(STA3C03) | |
|  | CO.1. | Gain a deep understanding of the fundamental concepts related to probability, random variables, and sampling theory. |  |
|  | |
|  | CO.2. | Demonstrate knowledge of various probability distributions, including discrete and continuous distributions such as the binomial, Poisson, normal, exponential, and uniform distributions. |  |
|  | |
|  | CO.3. | Learn various sampling techniques, including simple random sampling, stratified sampling, systematic sampling, and cluster sampling. |  |
|  | |
|  | CO.4. | distinguish between populations and samples |  |
|  | |
|  | CO.5 | Apply results from large-sample theory and the Central Limit Theorem to approximate a sampling distribution. |  |
|  | |
|  | CO.6. | Understand the concept of sampling distributions and their role in statistical inference. | |

|  |  |  |
| --- | --- | --- |
|  |  | **Semester IV** |
| COURSE CODE, COURSE NAME AND COURSE  OUTCOMES (**CO**s) |  | STATISTICAL INFERENCE AND QUALITY CONTROL(STA4C04) |
|  | CO.1. | Develop a solid understanding of the principles of statistical inference, including estimation and hypothesis testing. |
|  | CO.2. | Learn techniques for point estimation of population parameters, including maximum likelihood estimation and method of moments. |
|  | CO.3. | Calculate and interpret confidence intervals for population parameters, such as means, variances, and proportions. |
|  | CO.4. | Calculate and interpret confidence intervals for population parameters, such as means, variances, and proportions. |
|  | CO.5 | Formulate and conduct hypothesis tests for population parameters, including tests for means, variances, proportions, and independence. |

|  |  |  |
| --- | --- | --- |
|  | CO.6. | Learn the principles and techniques of quality control, including process control and product quality control. Familiarize yourself with statistical process control methods, such as control charts, to monitor and improve processes. |