Course Title	Introduction to Statistics
Course Code	**MAN 128 1.0**
Credit Value	01
Status	Core
Year / Level	Year 1
Semester	2
Theory: Practical: Independent Learning	15: 00: 35
Other: Pre-requisite Course/s	None

Aim of the Course:

To provide a basic understanding about statistical techniques and its role in present world by providing a sound foundation for understanding the concepts, theory and applications by integrating numerous examples.

Intended Learning Outcomes:

On the successful completion of this course, the student should be able to:

1) Identify statistical techniques and its role in day today life.

2) Introducing data collection methods and apply descriptive statistics for decision making.

3) Introduction to probability and distribution theory, familiarizing students with the concepts of probability, random variables and some common probability distributions.

4) Introducing sampling distributions.

Course Content:

Introduction to statistical techniques and its uses in day today life.
Realizing and defining variables in real world problems, basics of planning surveys and collection of data.
Decisions based on descriptive statistics.
Introducing elementary probability theory and solving problems using it.
Introducing random variables and probability distribution to solve real world problems.
Using knowledge on sampling distributions to introduce the inferential statisitics.

Scope and Schedule of Teaching - Learning Activities:

Session No.	Topic / Sub Topic	No. of Hrs.			Teaching Method	Assessment Criteria	ILO Alignment
		T	P	IL			
1	**1. Introduction** 1.1. History and applications of statistics 1.2. Definition and types of statistics 1.3. Types of variables 1.4. Levels of Measurement of Variables	1	-	2	Lecture / Handout 1		1
2	**2. Descriptive statistics** 2.1. Definition of various terms 2.2. Collection of Data 2.3. Types of Data 2.4. Editing of Data	2	-	4	Lecture / Handout 2		1,2
3	2.5. Representation of Data 2.6. Summary Measures	2	-	4	Lecture / Handout 2		1,2,3
	3. Elementary Probability Theory 3.1. Definition of various terms 3.2. Definition of probability	2	-	4	Lecture / Handout 3		1,2,3
4	3.3. Independence 3.4. Rules of addition of probability 3.5. Conditional probability	2	-	4	Lecture / Handout 3		1,3
5	3.6. Multiplicative low of probability 3.7. Total probability low 3.8. Bayes' Theorem	2	-	4	Lecture / Handout 3		1,3
6	**4. Probability Distributions** 4.1. Definition of random variables 4.2. Definition of random variables, The mean / variance and standard deviation of a probability distribution 4.3. Binomial probability distribution	2	-	4	Lecture / Handout 4		1,3
7	4.4. Poisson probability distribution 4.5. Normal probability distribution 4.6. Normal probability distribution	2	-	4	Lecture / Handout 4		1,3
8	**5. Sampling Distributions** 5.1. Definition of probability sampling 5.2. Method of probability sampling 5.3. Sampling error 5.4. Sampling distribution of the sampling means	2	-	4	Lecture / Handout 5		1,4
	Total	*15*	-	*35*			

Programme Learning Outcomes:

1. Demonstrate competency in theoretical knowledge and practical and/or technical skills in respective subject areas.
2. Communicate efficiently and effectively in the respective subject areas using written, oral, visual and/or electronic forms.
3. Facilitate, and participate as an empathetic and emotionally intelligent team player with leadership qualities, in a group, diverse team or organization.
4. Apply subject based knowledge and skills creatively in making appropriate judgments in changing situations.
5. Integrate creativity and innovation to achieve entrepreneurial competencies.
6. Implement solutions in keeping with ethical, societal and environmental norms and need for sustainable development.
7. Secure life goals through lifelong learning with the aim of strengthening professional skills, and ensuring the betterment of the community.

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
ILO 1	*		*	*	*		**
ILO 2	***	*		**		*	**
ILO 3	***	*		**		*	*
ILO 4	***	*		*		*	**

*** - Strongly Linked; ** - Medium linked; * Weakly linked*

Mode of Assessment:

Formative Assessment (FA):   FA1 10% + FA2 10% + FA3 10% = 30% of Total Marks

Summative Assessment (SA): End Semester Examination: 1-hour paper covering
3 Essay-type questions = 70% of Total Marks

References

- Introduction to Statistics – David Lane, Rice University

- Introductory Business Statistics – Lex Holmes, Barbara Illowsky, Susan Dean

- The Visual Display of Quantitative Information - Edward R. Tufte

- Research Methodology – C.R. Kathori