

Xavier Institute of Management XIM University

Course Name	Business Statistics
Program	EMBA-BM
Batch	2023-24
Term	I
Credits	3
Course Instructor	Prof Shabana Chandrasekaran

Course Introduction and Objectives

This course is an introduction to statistics designed for full time business school executive programme participants. In the rapidly changing business environment with abundance of data, it is imperative to have an appreciation of data, its presentation, analysis, and interpretation. This course aims at imparting these skills so that you can make better use of data in decision making. The course also introduces various aspects of statistics to the participants. The course encompasses interpretation of problems, analysis and inference tools applicable for various managerial situations. Participants will be able to understand concepts of probability, randomness, and addressing randomness in form of probability distributions. This course also deals with basic tools and techniques of statistical inference like sampling, hypothesis testing, and regression analysis.

Key Course Content

- What is the role of statistics in business decision making?
- How a business decision making scenario can be formulated as a statistical model?
- Scientific approach to data, its collection, description, analysis, and interpretation
- Significance of uncertainty in business environment and relevance of probability
- Inferential statistics and hypothesis testing
- Studying the association between two or more variables.

Course Learning Outcomes (CLO)

- **CLO 1:** Be able to understand the significance and relevance of statistics in contemporary business.
- **CLO 2:** Be able to understand and apply descriptive statistical measures numerically as well as pictorially.
- **CLO 3:** Be able to understand and apply probability (associated concepts), inferential statistics (hypothesis testing) and solve various business decision making problems by pen and paper as well as by computer.
- **CLO 4:** Be able to understand and apply concepts in correlation and linear regression.

Reading and References

- a) Textbook: Statistics for Business and Economics by Anderson Sweeney Williams
- b) Reference Books:
 - a. Statistics for Management – By Levin and Rubin – Practice Hall of India
 - b. Business Statistics: For Contemporary Decision Making, Wiley Publication

Additional Resources

- Readings/practice exercises/ case studies will be shared during the course as per the course learning outcomes.

Pedagogy and Students Workload

The pedagogy includes lectures, classroom exercises, case studies, and project. Students are expected to read through the materials given to them as and when required during the course as well as solve problems/numerical from the recommended textbook which amounts to significant preparation time of 4-5 hours per week (besides the session time). The instructor will share the details of pedagogical mode, evaluation components and deliverables in the initial couple of sessions.

It is expected that the student should connect with the faculty in case of any concern or doubt over e-mail or zoom with prior appointment.

Session Plan

Session	Topic	Learning	Reading(s)
1	Introduction to business statistics	Relevance and significance of statistics to business	Chapter 1
2-5	Descriptive Statistics: Representation and Visualization	Key concepts and definitions	Chapter 2 and 3
6	Introduction to Probability	Key concepts and application in Business	Chapter 4
7-8	Probability trees and bayes theorem	Key definitions and axioms	Chapter 4 <i>Case: Ratnagiri Alphonso Orchard: Bayesian Decision Analysis</i>
9	Discrete Probability distributions	Key definitions and application in business	Chapter 5
10	Continuous probability distributions	Key concepts and relevance to business	Chapter 6
11	Significance of sampling	Key ideas and definitions	Chapter 7 <i>Case: Understanding Political Polls</i>
12	Basics of statistical Interference - Interval Estimation	Core concepts and business relevance	Ch-8 <i>Case study: Hollywood Rules</i>
13-14	Hypothesis testing	Key definitions and significance in business	Chapter 9 <i>Case study: Hollywood Rules</i>
15	Measuring goodness of fit	Chi-square test and associated key definitions	Chapter 12

16	Measuring association of two variables	Correlation and related key definitions, relevance in business	Chapter 14
17-18	Linear regression	Key concepts and the significance	Chapter 14 & 15
19	Group project presentations	Innovative application of statistics in business decision making	
20	Course Wrap-up	General discussion	

Assessment Scheme

Component	Weightage (%)	Assessment of Course Learning Outcome(s)
Quizzes (Best 2 out of 3)	30%	CLO 1, CLO 2, CLO 3 and CLO 4
Group Assignment	20%	CLO 1, CLO 2, CLO 3 and CLO 4
Classroom Participation	10%	CLO 1, CLO 2, CLO 3 and CLO 4
End-term	40%	CLO 1, CLO 2, CLO 3 and CLO 4

Academic Discipline and Integrity

- Usage of mobile phones and ear pods/headphones are strictly prohibited inside the classroom. Any student found using the above will be marked absent without any prior warning/intimation.
- Students are expected to come prepared for each class having gone through cases and relevant reading materials.
- There will be no makeup exams for quizzes. For other exam, institute rules will be followed.
- For doubt clarifications, request to fix an appointment by mail before discussion.
- For all in-class and evaluation purposes, the decision of the course instructor will be binding and final on every student.
- The instructor reserves the right to modify the sequence of sessions and make minor alterations in course outline and/or evaluation component(s) during the timeline of the course administration.

Academic Discipline and Integrity

- Violations of academic integrity will be dealt as per the student manual of policies, XIM.
- For all in-class and evaluation purposes, the decision of the course instructor will be binding and final on every student.
- No Makeup Exams. Marks for missed components will be equated to the minimum of the other attended components (in percentage terms).

Mapping Course Learning Outcomes (CLO) with the Program Learning Goals (PLG)

PLG#	Program Learning Goals	Trait	Addressed by Course	
			Yes	No
PLG 1	Functional and Business Skills	The students will demonstrate understanding of elements of all functional areas.	✓	
PLG 2	Analytical Skills	The students will use analytical techniques to identify a business problem, and suggest a solution	✓	
PLG 3	Collaboration and Teamwork Attributes	The students will exhibit voluntary cooperation and effective teamwork in a group setting	✓	
PLG 4	Ethical Responsibility	The students will understand the ethical complexities of conducting business. The students will adopt techniques in scenarios involving ethical dilemma and offer resolution		✓
PLG 5	Communication	The students will produce reasonably good quality business documents. The students will become effective and confident communicators	✓	